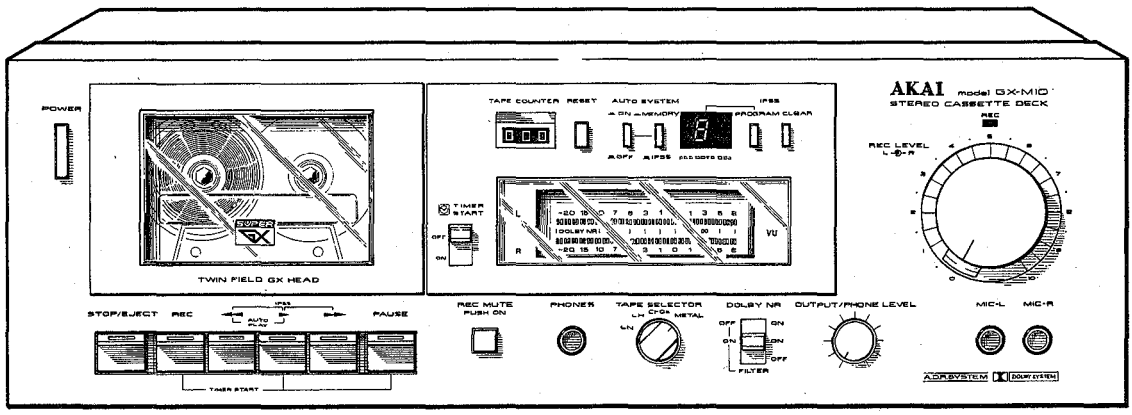
GX-M10

# AKAI SERVICE MANUAL




## STEREO CASSETTE DECK

## MODEL GX-M10

# STEREO CASSETTE DECK

# MODEL GX-M10

ALSO APPLICABLE TO BLACK PANEL MODEL

SECTION 1 SERVICE MANUAL ..... 3
SECTION 2 PARTS LIST ..... 35
SECTION 3 SCHEMATIC DIAGRAM ..... 51

SECTION 1

# SERVICE MANUAL

TABLE OF CONTENTS


I. TECHNICAL DATA ..... 4
II. DISMANTLING OF UNIT ..... 5
III. CONTROLS ..... 6
IV. PRINCIPAL PARTS LOCATION ..... 7
V. VOLTAGE AND CYCLE CONVERSION ..... 8
1. VOLTAGE CONVERSION ..... 8
2. CYCLE CONVERSION ..... 8
VI. IPSS CIRCUITRY OPERATION EXPLANATION ..... 9
VII. TIMER START SWITCH OPERATION ..... 17
VIII. AUTO STOP MECHANISM OPERATION ..... 18
IX. MECHANISM ADJUSTMENT ..... 20
X. HEAD ADJUSTMENT ..... 22
XI. AMPLIFIER ADJUSTMENT ..... 28
XII. DC RESISTANCE OF VARIOUS HEADS ..... 28
XIII. CLASSIFICATION OF VARIOUS P.C BOARDS ..... 28


For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

# I. TECHNICAL DATA

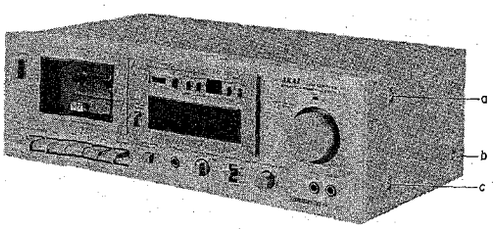
| | |
|---|---|
| TRACK SYSTEM | 4 track 2 channel stereo system |
| TAPE | Philips type cassette |
| TAPE SPEED | 4.76 cm/s ± 1.5% (1-7/8 ips. ± 1.5%) |
| HEADS | (2): Erase head × 1<br>Twin field Super GX head × 1 |
| MOTOR | (1): Electronically speed controlled DC motor |
| WOW & FLUTTER | Less than 0.04% WRMS. 0.14% (DIN 45500) |
| TAPE WINDING TIME | 90 sec. using a C-60 cassette tape |
| FREQUENCY RESPONSE | LN 30 to 15,000 Hz ± 3 dB (–20 VU)<br>LH 30 to 16,000 Hz ± 3 dB (–20 VU)<br>$CrO_2$ (SA) 30 to 16,500 Hz ± 3 dB (–20 VU)<br>30 to 8,000 Hz ± 3 dB (0 VU)<br>Metal 30 to 19,000 Hz ± 3 dB (–20 VU)<br>30 to 12,000 Hz ± 3 dB (0 VU) |
| SIGNAL TO NOISE RATIO | LN better than 58 dB<br>LH better than 59 dB<br>$CrO_2$ (SA) better than 60 dB<br>Metal better than 61 dB<br>(Measured via tape with peak recording level)<br>Dolby NR switch ON: Improves up to 10 dB above 5 kHz |
| HARMONIC DISTORTION | LN less than 0.8%<br>LH less than 0.8%<br>$CrO_2$ (SA) less than 0.7%<br>Metal less than 0.6% |
| CHANNEL SEPARATION | 27 dB at 1,000 Hz |
| CROSS TALK | 60 dB at 1,000 Hz |
| INPUT | MIC: 0.3 mV (Input impedance 5.0 kohms)<br>Required microphone impedance: 600 ohms<br>Line: 70 mV (Input impedance 47 kohms) |
| OUTPUT | Line: 410 mV at 0 VU<br>Required load impedance: more than 20 kohms<br>Phone: 100 mV/8 ohms at 0 VU |
| DIN | Input: 2.0 mV (Input impedance 10 kohms)<br>Output: 410 mV<br>Required load impedance: more than 20 kohms |
| DIMENSIONS | 440(W) × 143(H) × 250(D) mm (17.3 × 5.6 × 9.8") |
| WEIGHT | 6.0 kg (13.2 lbs) |
| POWER CONSUMPTION | 12 W |
| POWER REQUIREMENTS | 100V, 50/60 Hz for Japan<br>120V, 60 Hz for U.S.A. & Canada<br>220V, 50 Hz for European countries except U.K.<br>240V, 50 Hz for U.K. & Australia<br>110/120/220/240V switchable, 50/60 Hz for the other countries |

* For improvement purposes, specifications and design are subject to change without notice.
* "Dolby" and the Double D symbol are trademarks of Dolby Laboratories.
(Manufactured under license from Dolby Laboratories).

# II. DISMANTLING OF UNIT

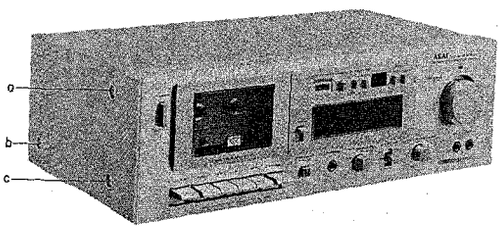
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

1



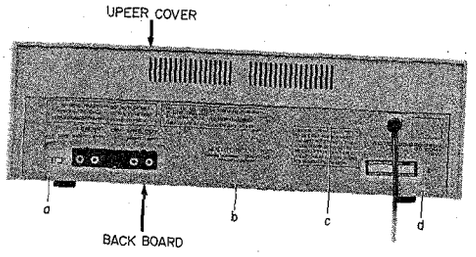

SCREWS

2



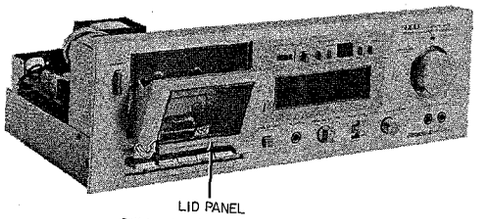

SCREWS

3




SCREWS

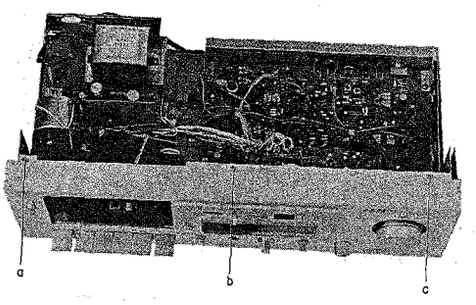
4



LID PANEL

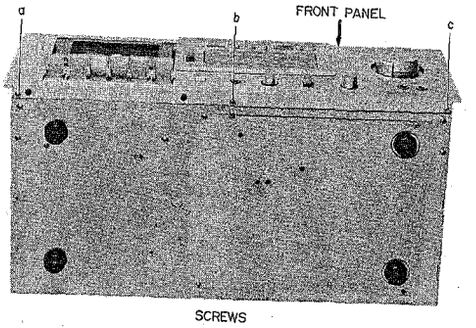
Pull toward you both lower-ends of holder.

5



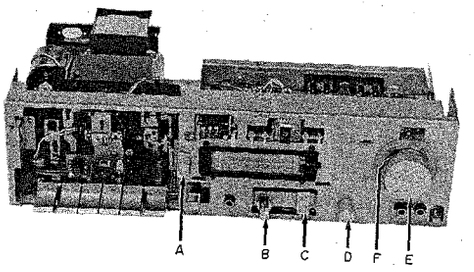

SCREWS

6



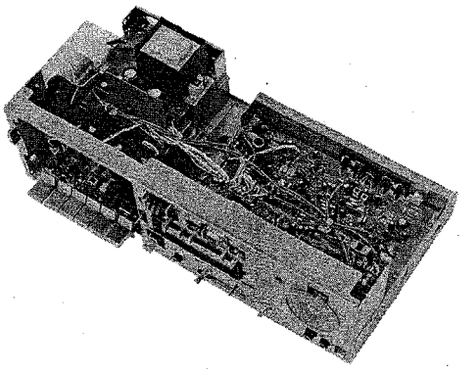

SCREWS

7




CONTROL KNOBS

8



# III. CONTROLS

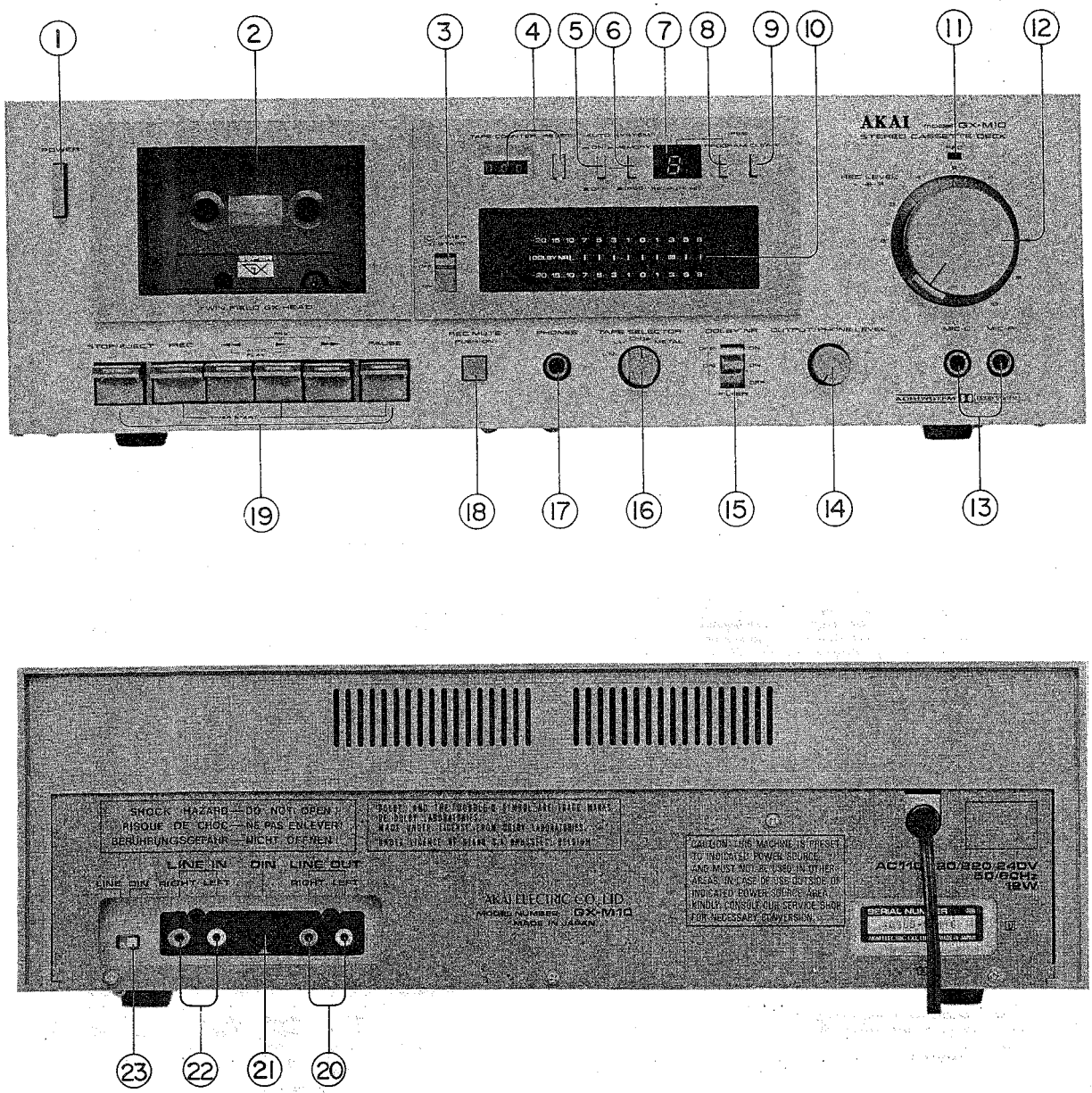



Fig. 1 Controls

1. POWER SWITCH
2. CASSETTE RECEPTACLE
3. TIMER START SWITCH
4. INDEX COUNTER AND RESET BUTTON
5. AUTO SYSTEM SWITCH
6. MEMORY/IPSS SWITCH
7. PROGRAM DISPLAY
8. IPSS PROGRAM SWITCH
9. CLEAR SWITCH
10. FL DISPLAY BAR METER
11. RECORDING INDICATOR LAMP
12. LEFT —)— RIGHT RECORDING LEVEL CONTROLS
13. MICROPHONE JACKS
14. OUTPUT/PHONES LEVEL CONTROL
15. DOLBY NR SWITCH AND FILTER
16. TAPE SELECTOR
17. HEADPHONE JACK
18. REC MUTE
19. OPERATING KEYS
20. LINE OUTPUT JACKS
21. DIN JACK (The JPN, USA models do not have this facility)
22. LINE INPUT JACKS
23. INPUT SELECTOR SWITCH
    (The JPN, USA models do not have this facility)

# IV. PRINCIPAL PARTS LOCATION

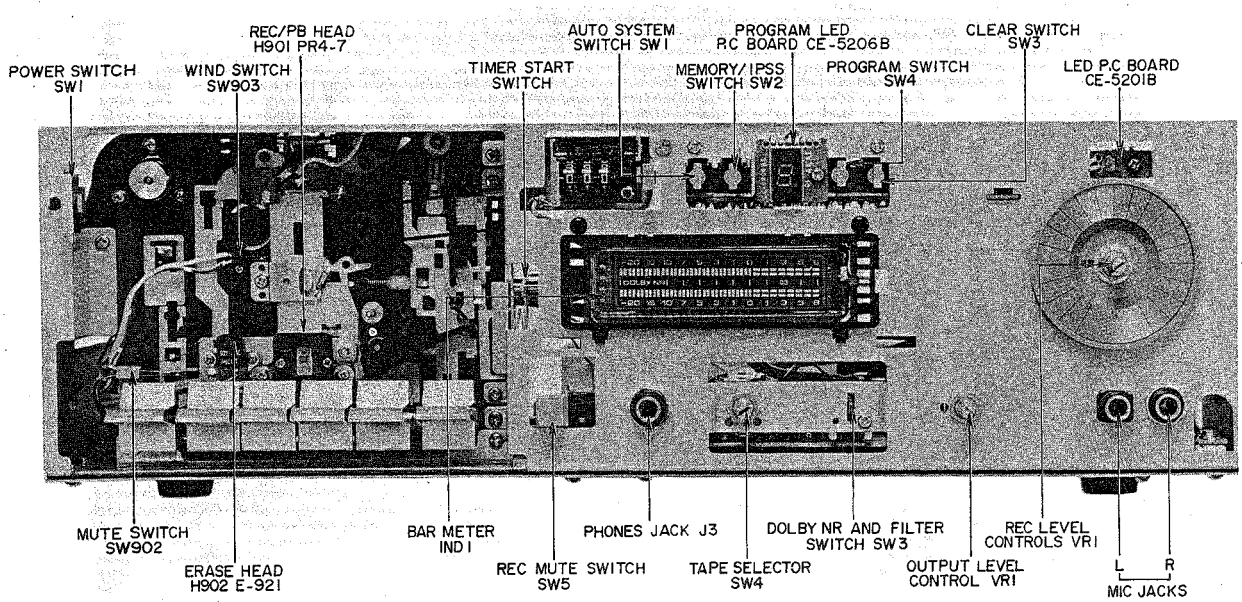



Fig. 2 Front View

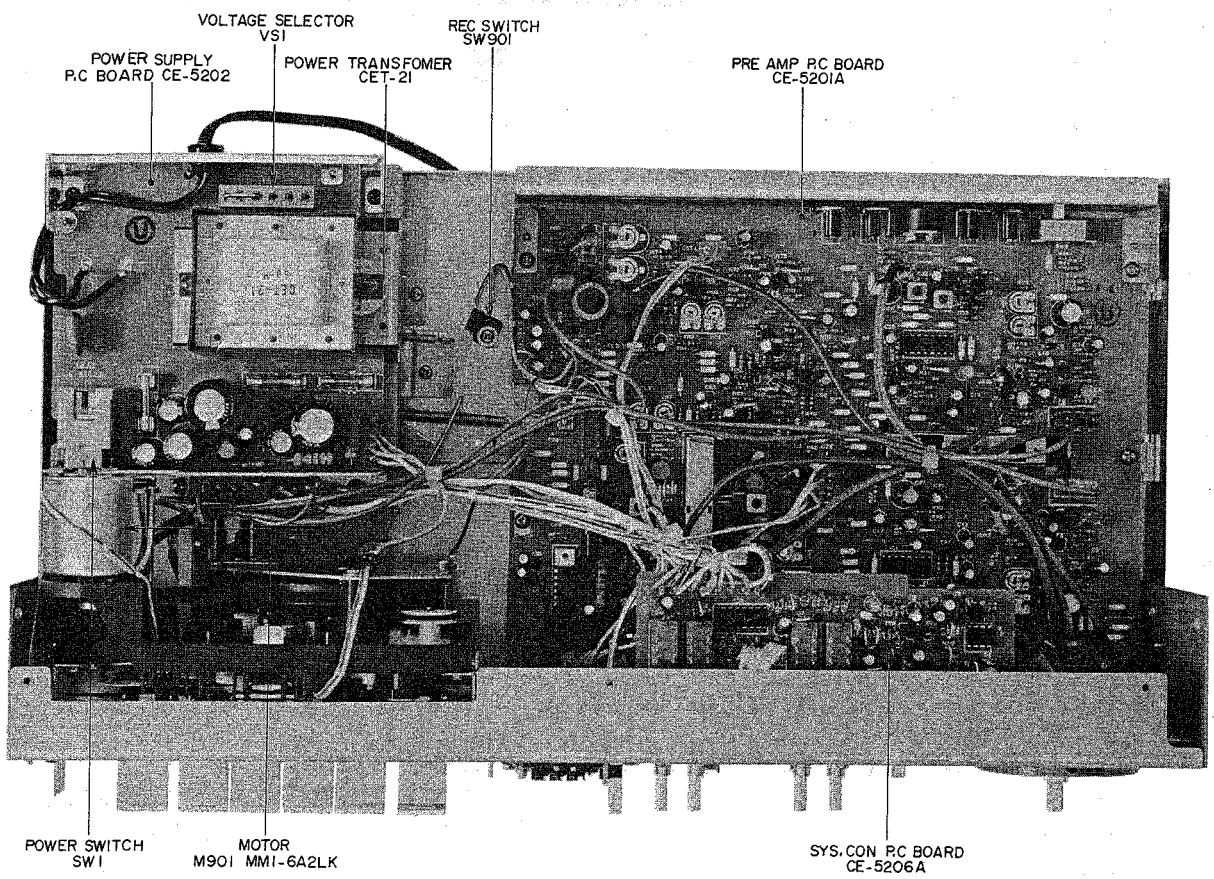



Fig. 3 Top View

# V. VOLTAGE AND CYCLE CONVERSION

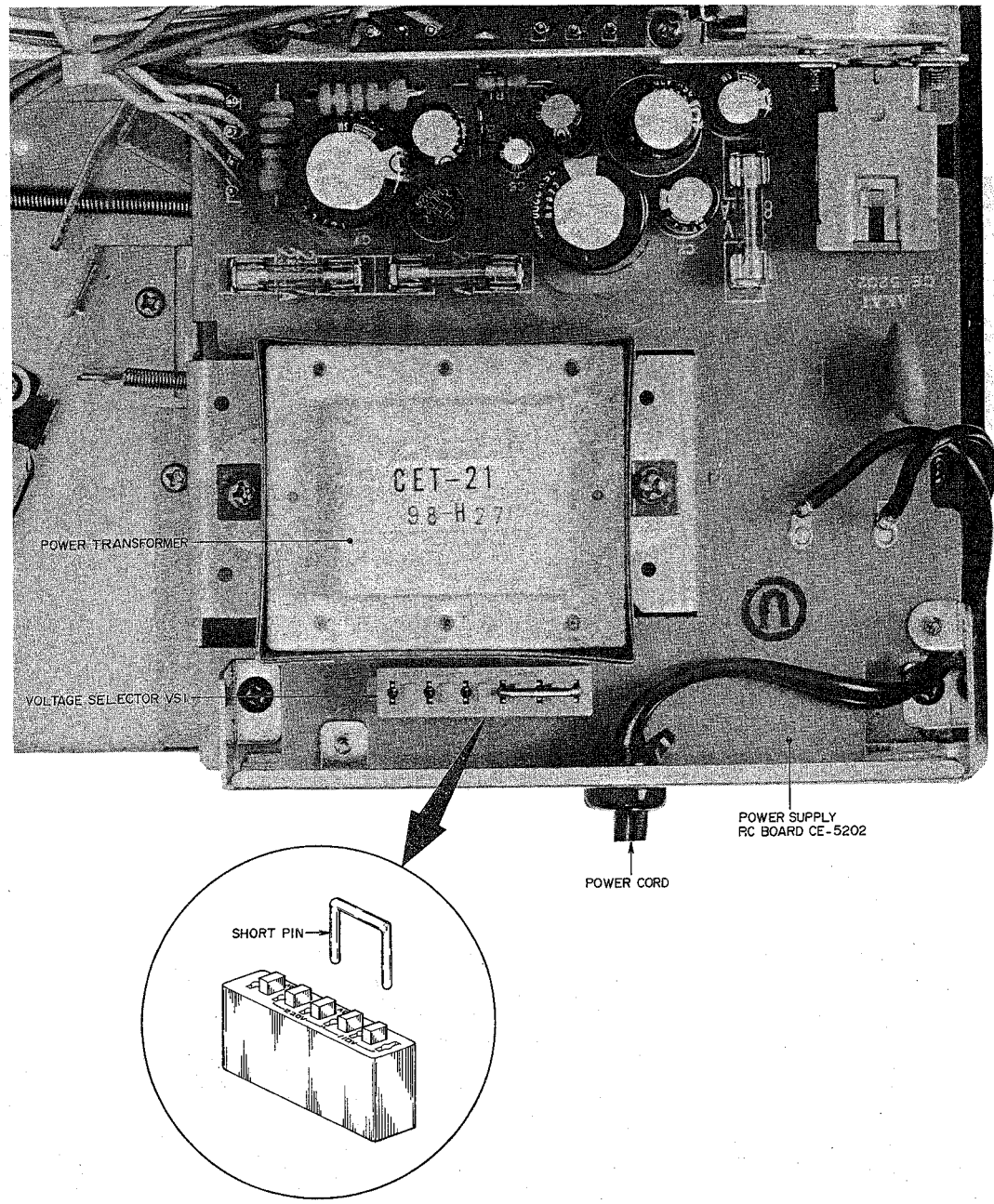



Fig. 4 Voltage Conversion (U/T Model)

## 1. VOLTAGE CONVERSION

Models for Canada, Europe, USA, UK, Australia and Japan are not equipped with this facility.

Each machine is preset at the factory according to destination, but some machines can be set to 110V, 120V, 220V or 240V as required.

If voltage change is necessary, this can be accomplished as follows:

1. Disconnect power cord.
2. Loosen holding screws and remove upper cover and back board.
3. Remove short pin plug from present holes and replace in correct holes. Follow the markings explicitly.

## 2. CYCLE CONVERSION

With DC motor, cycle conversion is not necessary.

# VI. IPSS CIRCUITRY OPERATION EXPLANATION

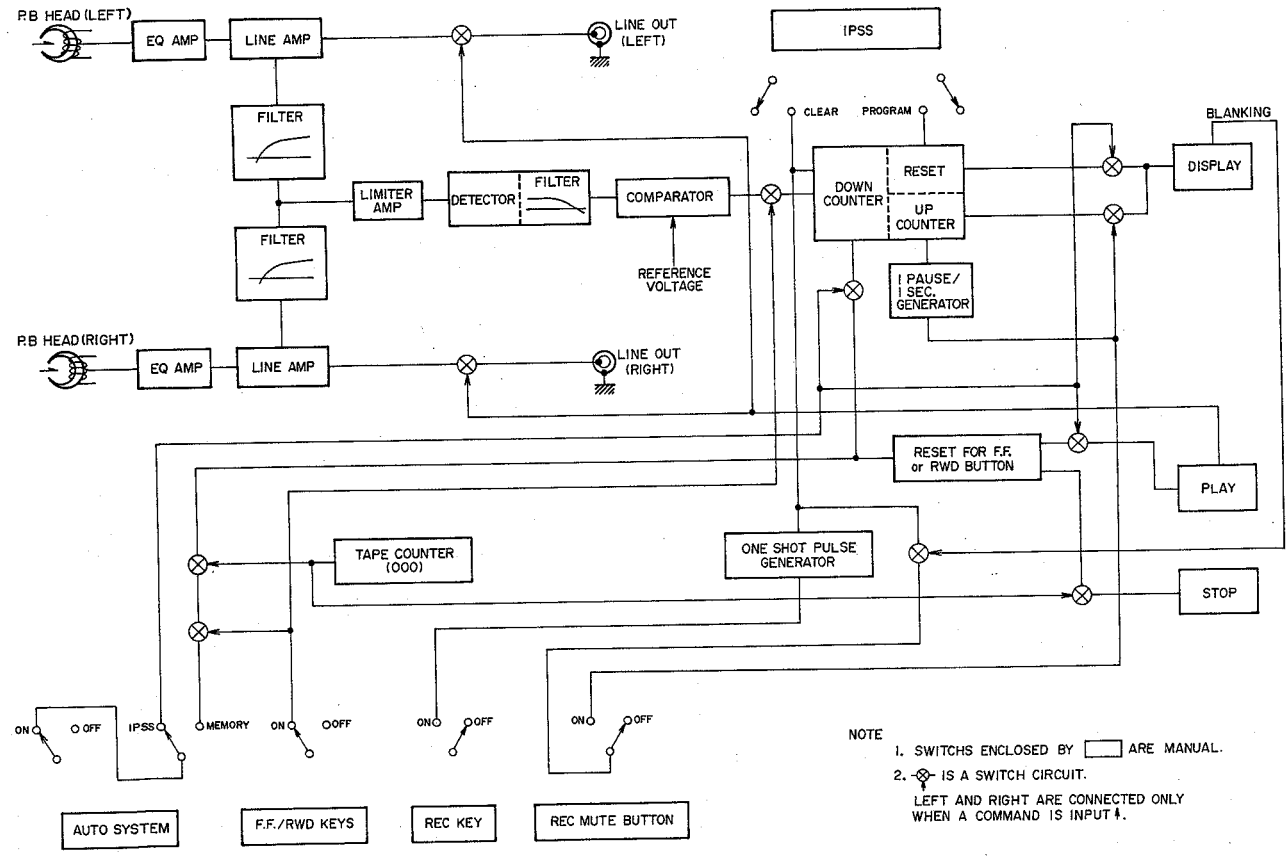



Fig. 5 IPSS/MEMORY SYSTEMS BLOCK DIAGRAM

1. IPSS (Instant Program Searching System) is the programing in advance of the song or songs (up to 9 from the present position on the tape) you want to listen to. When the FF or RWD and PLAY keys are depressed simultaneously, the no signal portion between songs is detected by the REC/PB head and the number of these is counted down according to the programmed number of songs. As it goes from 1 to 0, the FF or RWD key is released and it enters the Play mode.

## 2. CIRCUITRY DETECTING THE NO SIGNAL PORTION (Refer to Figs. 6, 7, & 8)

When the FF or RWD and PLAY keys are depressed simultaneously, the REC/PB contacts the tape and the signal on the tape is picked up by REC/PB head. The head is about 1.7 mm lower than it would be in the playback mode.

The picked up signal is added to input IC1-1 ② in the Limiter Amp., it is amplified, detected by D2 and added as TR1's base bias. TR1 is ON and IC1-2 ⑥ is practically earth potential. The standard voltage of the Comparator (IC1-2) is 1/2 Vcc (about 6V) so the output ⑦ becomes Vcc (about 12V).

When a no signal portion is reached, base bias is not added to TR1 and it is turned OFF. C3 charges and IC1-2 ⑦ becomes Low Level at the point that IC1-2 ⑥'s potential exceeds the standard voltage (1/2 Vcc) in the comparator. As a result, charging current flows into C5 and a trigger pulse is generated at the cathode side of D14. IC2 counts down by this pulse's falling portion.

C2 and R5 are to compensate for the high frequency level drop caused by the head not touching the tape perfectly.

When there is noise in the portion between songs on the tape, there is more than one trigger pulse generated in the portion making miscounting a probability. C5's charged and discharged electricity are used to prevent this occuring.

C5 is charged through D3 and R56 while IC1-2 ⑦ is at Low Level (no signal portion between the songs on the tape) and both terminal's voltage difference is almost Vcc (+12V). When the no signal portion is over IC1-2 ⑦ becomes High Level and because it is piled on to the potential charged to C5, D14's cathode side's potential becomes higher than +B's (+12V) potential. Then C5 will discharge through R14 until both terminal's potentials are equal. Until C5 discharged down to a certain level even if IC1-2 ⑦ becomes Low Level, only a small trigger pulse is created in the D14 cathode side and does not reach the IC2's DOWN COUNT operation level. Therefore the programme counter does not count.

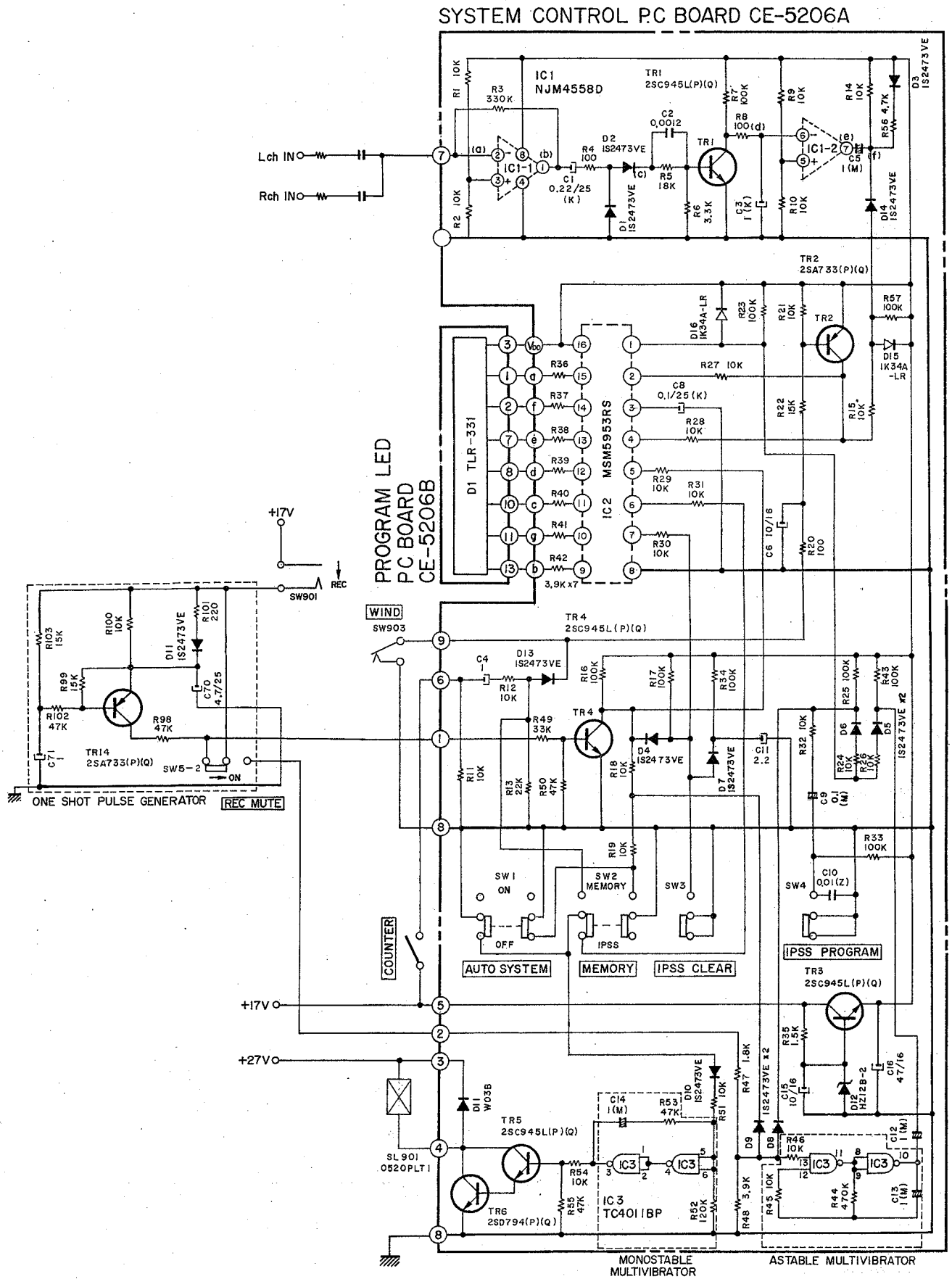



Fig. 6 IPSS/MEMORY SYSTEMS SCHEMATIC DIAGRAM

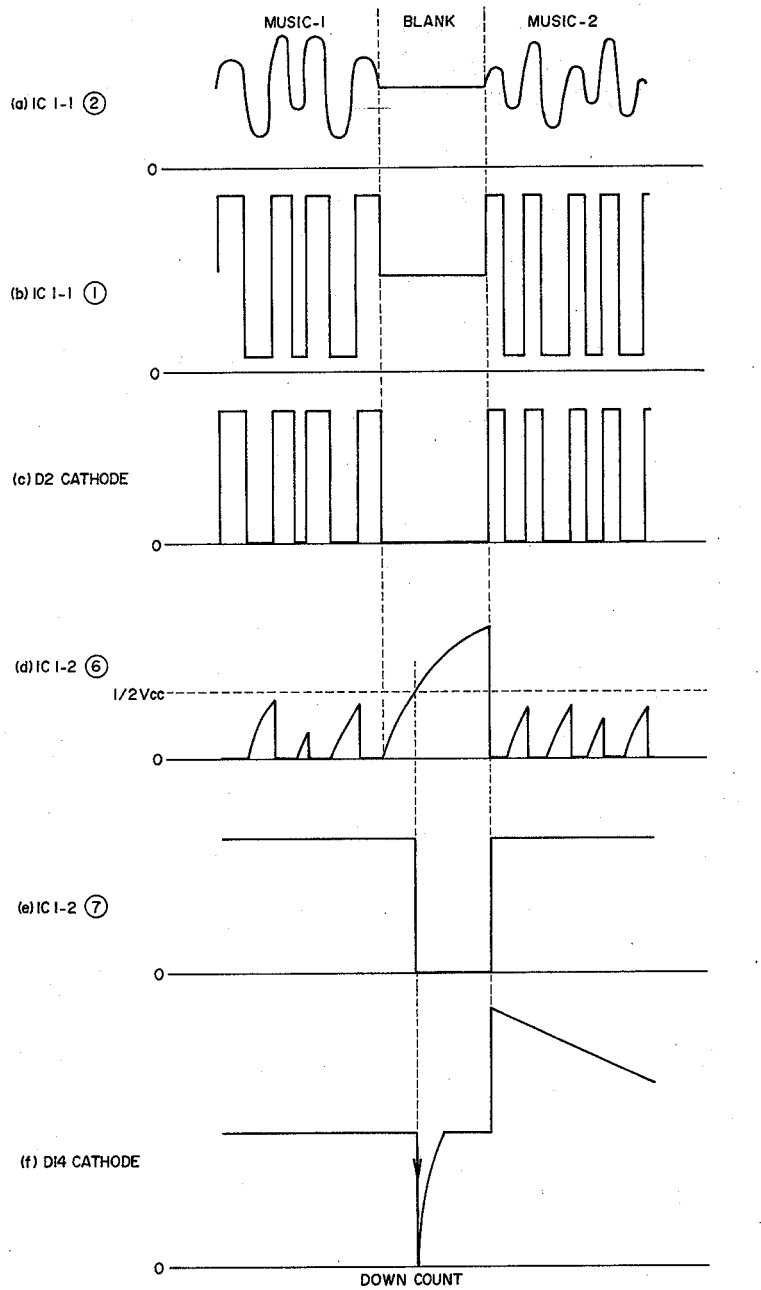



Fig. 7

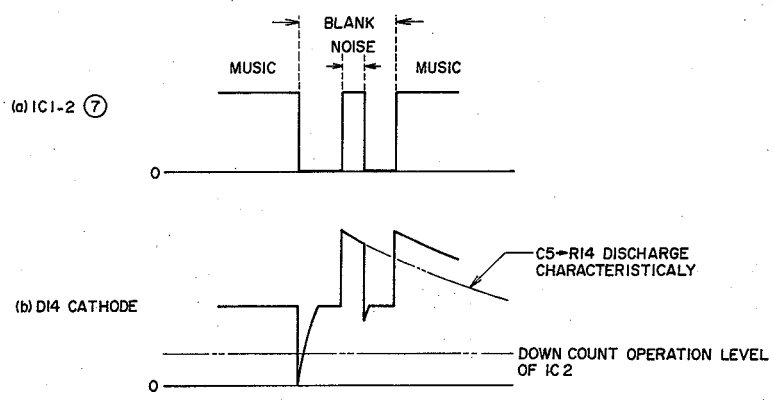



Fig. 8 When there is noise in the portion between songs on the tape

## 3. CIRCUIT CONSTRUCTION OF IC2 MSM 5953RS

Function BCD UP/DOWN COUNTER/7 SEGMENT DECODER/DRIVER

Construction C MOS IC

### 1) Block Diagram

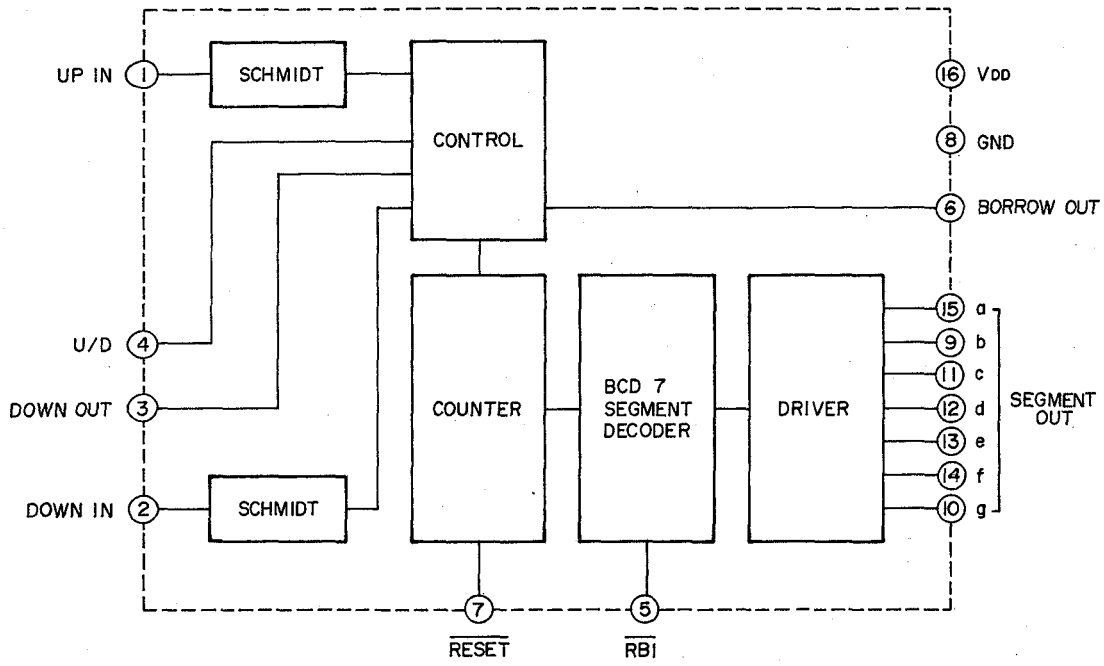



Fig. 9 MSM5953RS

### 2) Terminals and their functions

1. UP IN: Counts up (+1) using the raised portion ⌐¬ of the pulse.
2. DOWN IN: Counts down (−1) using the falling portion ¬⌐ of the pulse. Does not count at 0.
3. DOWN OUT: Outputs when there is DOWN IN input.
   When a condenser is attached between this and GND, after input enters the DOWN IN terminal, the delayed time can be adjusted up until the counter counts down.
4. U/D (UP/DOWN): There is input to the DOWN IN terminal but counts down only when this terminal is Low Level.
5. RBI (Ripple Blanking Input): When put to Low Level the counter display (LED) is extinguished.
6. BORROW OUT: There is momentary output when there is DOWN input after the counter goes from 1 to 0 or from 0.
7. RESET: When put to Low Level the counter is reset to 0.

9 to 15 SEGMENT OUT: Connects the Anode Common 7 Segment LED.
Light up when put to Low Level.

### 3) Function Table

| $\overline{\text{RESET}}$ | U/D | DOWN IN | UP IN | COUNT CONDITION | COUNT |
|---|---|---|---|---|---|
| H | H | X | ↓ | X | NO |
| H | H | X | ↑ | X | UP COUNT (+1) |
| H | L | L | ↓ | X | NO |
| H | L | L | ↑ | X | UP COUNT (+1) |
| H | L | ↓ | H | 1 to 9 | DOWN COUNT (−1) |
| H | L | ↓ | H | 0 | NO |
| L | X | X | X | X | CLEAR (0) |

X = Doesn't matter

Chart-1

| U/D | COUNT CONDITION | BORROW OUT |
|---|---|---|
| H | X | L |
| L | 1 to 9 | L |
| L | 0 | H |

X = Doesn't matter

Chart-2

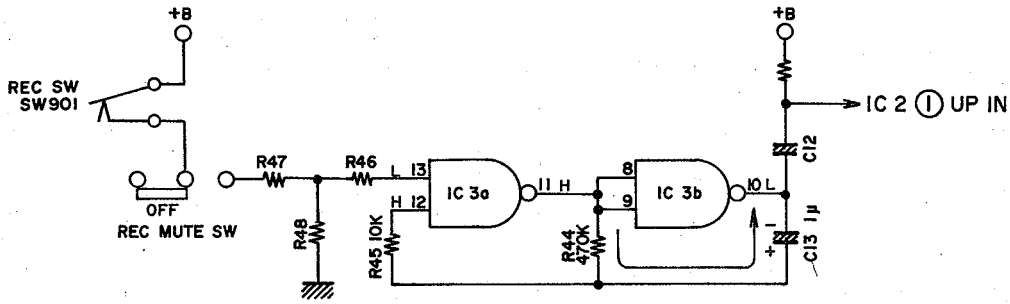
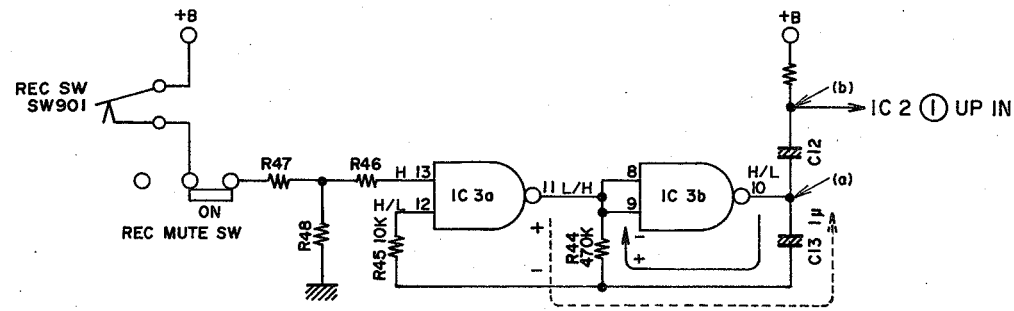



Fig. 10 Oscillation Stopped



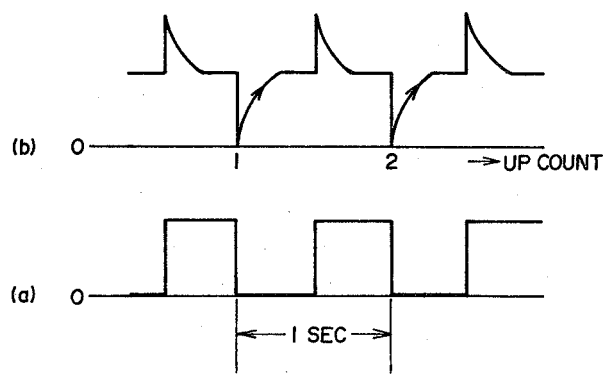




Fig. 11 Oscillation

## 4. OSCILLATOR CIRCUITRY FOR REC TIME COUNT (Refer to Figs. 10 and 11)

This circuit is to indicate the Rec Mute Time Count in Program LEDs and to add one second interval pulses to the UP IN terminal of IC2.

When the Rec Mute button is not depressed, IC3a's input terminal ⑬ is "L" and IC3b's output terminal ⑩ is "L". C13 has been discharged as in Fig. 10 and IC3a's input terminal ⑫ is changed to "H" by this potential.

At this point, when the REC MUTE switch is depressed, IC3a's ⑬ changes to "H" IC3a's output terminal ⑪ to "L" and IC3b's ⑩ to "H". As IC3's ⑪ has become "L", C13 discharged through R44. During this discharging period (time constants of C13 and R44) IC3's ⑫ becomes "H" due to the voltage drop at both terminals of R44.

Once C13 has finished discharging, there is no current flowing in R44 and the voltage drop is 0 so IC3a's ⑫ changes to "L". As a result IC3a's ⑪ becomes "H", IC3b's ⑩ "L" and this time the charging current flows from IC3a's ⑪ throught R44 to C13. During this charging period (Fixed time constants of R44 and C36) IC3a's ⑫ becomes "L".

After C36 has been charged, due to this potential, IC3a's ⑫, changes to "H", ⑪ to "L" and IC3b's ⑩ to "H". The above operation is repeated and a 1 Hz square wave appears at IC3b's output terminal ⑩

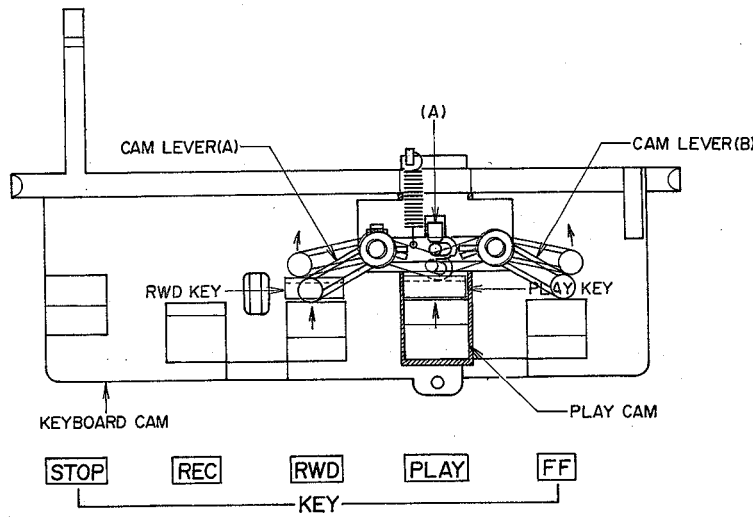
## 5. MONOSTABLE MULTIVIBRATOR OPERATION (Refer to Fig. 6)

A plunger is activated by IC2's output ⑥ to release the FF or RWD key in the IPSS mode. However in IC2's output there is a pulse width which is too narrow to drive the transistor directly so the pulse width is enlarged by a Monostable vibrator, the transistor drive is corrected and then the plunger is activated.

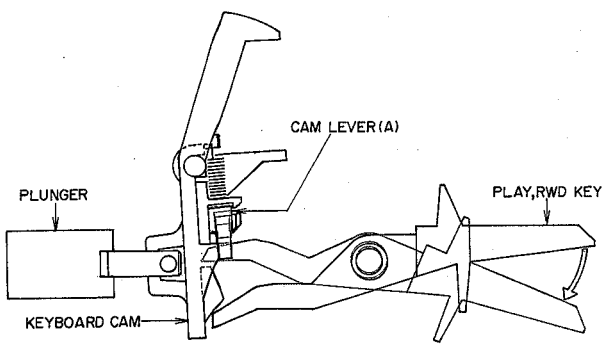
## 6. ONE SHOT PULSE GENERATOR (Refer to Fig. 6)

This circuit resets the counter for an instant when the REC key has been depressed while the REC Mute switch is being depressed.

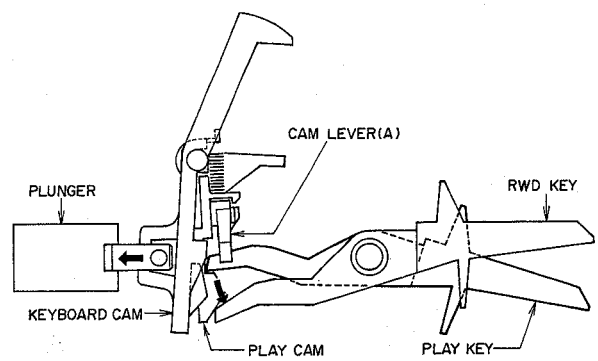
When the REC key has been depressed after the REC Mute key, if TR14 has not been attached, TR4 turns off and the IC2 counter does not reset. If the counter is counting down numbers with the program switch these numbers will be increased by the time taken to depress the REC Mute switch. To prevent this, when the REC switch is put on TR14 is put on simultaneously for a certain period (the difference between C70's and C71's charging periods) of time only. When TR14 is turned on TR4 turns on and the counter is reset. Therefore the REC MUTE TIME indication begins from 0.




(a)




(b)




(c)

Fig. 12

## 7. DESCRIPTION OF KEYBOARD OPERATION (Refer to Fig. 12)

With IPSS and MEMORY operation the PLUNGER is activated and pulls the KEYBOARD CAM back. Only the FF or the RWD keys are released and the deck is put in the playback mode by the combination of the KEYBOARD CAM, the PLAY CAM and the CAM LEVERS (A) and (B).

The PLAY CAM and the KEYBOARD CAM are fixed by slotting CAM LEVERS (A) and (B) into section A of the KEYBOARD CAM. (Refer to Fig. 12a.)

Now in the IPSS mode, when the RWD and PLAY keys are depressed simultaneously, the RWD key attaches to the ⌐¬ section of the KEYBOARD CAM and the PLAY key to the ⌐¬ section of the PLAY CAM.

CAM LEVER (B) which is being held up with CAM LEVER (A) by the RWD key also moves in the direction of the arrow. (Fig. 12a, b)

CAM LEVERS (A) and (B) separate from the section A which is fixing the KEYBOARD CAM and the PLAY CAM so even if the KEYBOARD CAM is pulled backwards, PLAY CAM remains attached to the PLAY key and does not move backwards. Therefore even when the PLUNGER pulls the KEYBOARD CAM backwards because of the IPSS and MEMORY operation, the PLAY CAM does not move back with the result that only the RWD key is released and the deck goes in to the play mode. (Fig. 12c)

This will be the same when the FF key is depressed simultaneously with the PLAY key.

After the FF or RWD and PLAY keys have been depressed simultaneously, when the STOP key is depressed once only the FF or RWD key will be released so to release the PLAY key the STOP key must be depressed one more time. This is due to the operation outlined above.

# VII. TIMER START SWITCH OPERATION

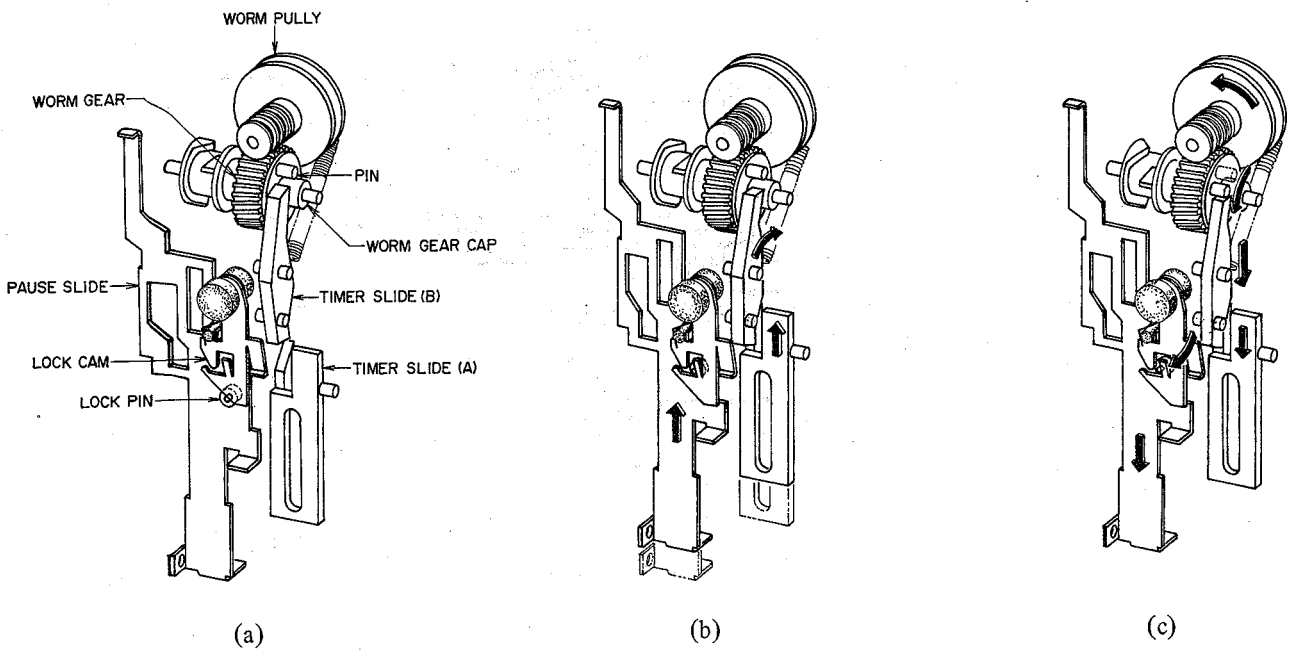



Fig. 13

The TIMER START SWITCH is designed to put the deck in the REC or PLAY modes by releasing the PAUSE key automatically (the PAUSE, REC and PLAY keys have already been depressed) when the power is turned on by the timer.

In the PAUSE mode, the PAUSE SLIDE is lifted up and fixed by attaching the LOCK PIN to the LOCK CAM so to release the PAUSE mode all you have to do is to detach the LOCK PIN from the LOCK CAM.

When put into the PAUSE mode, the LOCK PIN is attached to the LOCK CAM and the PAUSE SLIDE is locked. When the TIMER START SWITCH is put on TIMER SLIDE (A) moves upwards and as a result, TIMER SLIDE (B) moves upwards to the inside in the direction of the arrow and downwards to the outside. See Fig. 13b.

If the power switch is turned on here, the WORM PULLEY and the WORM GEAR revolve. The pin on the WORM GEAR CAP moves in the direction of the arrow TIMER SLIDE (B) is pushed down so the LOCK CAM is pushed upwards by this section. Then the LOCK PIN is detached, the PAUSE SLIDE lowers and the PAUSE key is released. The TIMER START SWITCH is also released because TIMER SLIDE (A) is pushed down by TIMER SLIDE (B).

# VIII. AUTO STOP MECHANISM OPERATION

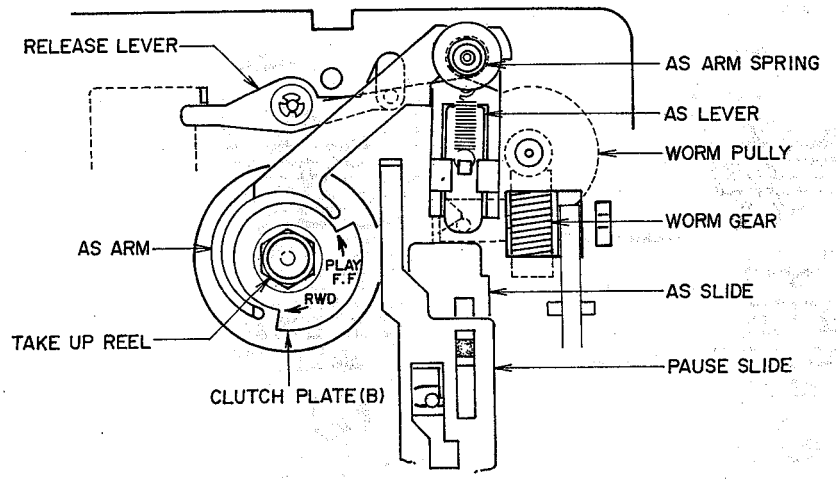
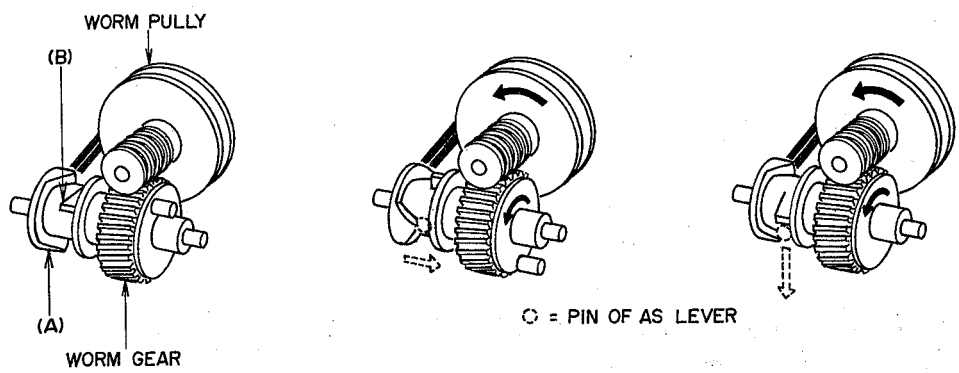



Fig. 14




(a) (b) (c)

Fig. 15

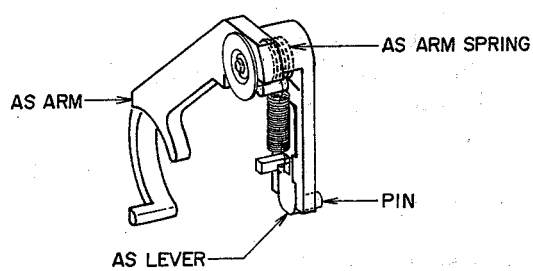



Fig. 16

AUTO STOP puts the deck into the STOP mode by releasing the keys when the end of the tape is reached in the PLAY, FF, RWD REC/PB modes.

## 1. HOW EACH PART OPERATES

a. CLUTCH PLATE (B) (Fig. 14)
There is felt attached to this and friction force is generated (Shown by the arrow) and it seems as if it is pushing the AS ARM outwards.

b. AS LEVER (Figs. 14, 16)
The pin attached to the rear of the AS LEVER enters the groove of the WORM GEAR. It touches against the ⌐¬ section a as the WORM GEAR revolves and moves to the left or right or is pushed down by ⌐¬ section B.

c. RELEASE LEVER (Fig. 14)
Adds the same friction force to the AS ARM by pulling down the AS ARM Spring in the pause mode as when the reel revolves.

2. When put into the PLAY (FF, RWD) mode the fly-wheel revolves and the WORM pulley and WORM gear revolves. The reel revolves and the CLUTCH PLATE goes to push the AS ARM outwards with the friction force so the pin at the rear of the AS LEVER receives this force to the left then it contacts the ridged section ⌐¬ A of the WORM GEAR and move to the left and right.
At the end of the tape, the reel stops revolving so the friction disappears. In the PLAY (FF, RWD) mode the RELEASE LEVER drops so friction is not added to the AS ARM from the AS ARM SPRING.
The Worm Lever continues to revolve and the AS LEVER pin is taken up to the top of the ridged ⌐¬ section where it then stops.
It is then pushed down by the WORM GEAR section B⌐¬, and pushes down the AS SLIDE with the AS LEVER and releases the PLAY (FF, RWD) keys.
When the PAUSE key is depressed from the PLAY mode the reel stops revolving and the force from the CLUTCH PLATE to the AS ARM stops. However the PAUSE SLIDE moves upwards and pushes up the RELEASE LEVER which had been held down so the same force is applied as to the AS ARM by the AS ARM SPRING so AUTO STOP does not operate.

# IX. MECHANISM ADJUSTMENT

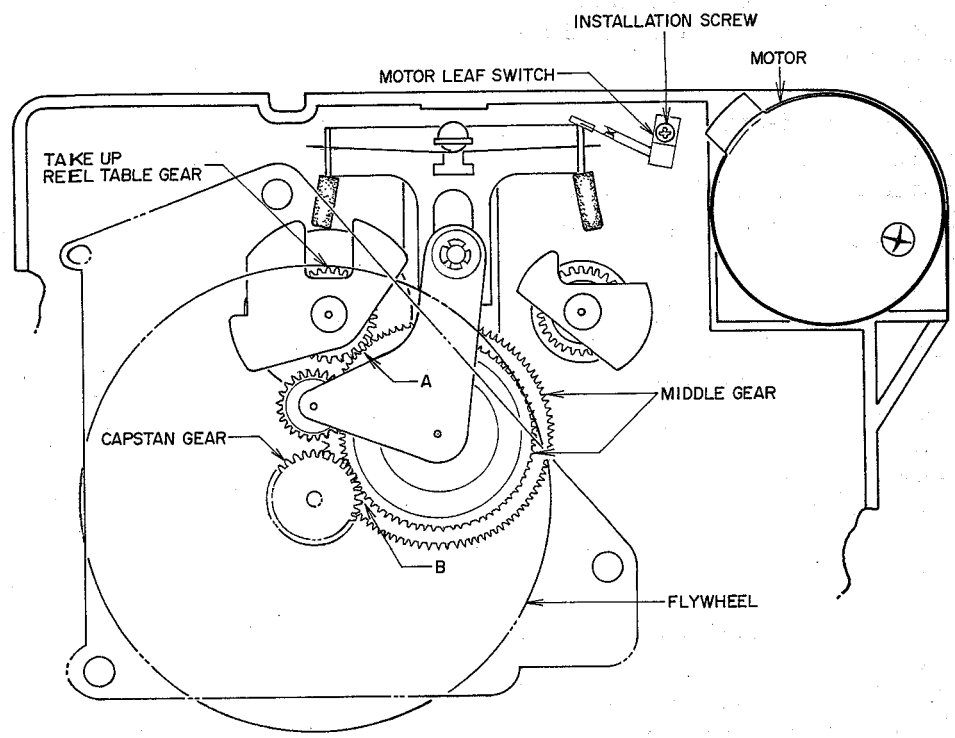



Fig. 17 Motor Leaf Switch Timing Adjustment

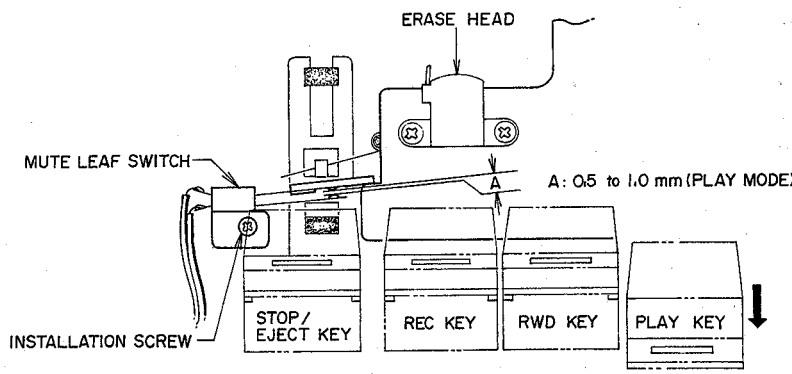



Fig. 18

## 1. MOTOR LEAF SWITCH TIMING ADJUSTMENT (Refer to Fig. 17)

The FF key has been depressed and when the capstan gear turns before points A and B gears are engaged, they screech because the middle gear which was engaged springs off. Adjust the timing of the motor revolutions to prevent this.

Gently depress the FF key and adjust the installation position of the motor leaf switch until the motor's switch is activated after the points A and B gears have been engaged slightly.

## 2. MUTE LEAF SWITCH INSTALLATION POSITION ADJUSTMENT (Refer to Fig. 18)

When in the playback mode, the space A should be 0.5 to 1.0 mm as in Fig. 18. To adjust, turn the leaf switch installation screw.

Confirm the switch stays in the same position when the FF and PLAY or RWD and PLAY keys are depressed together.

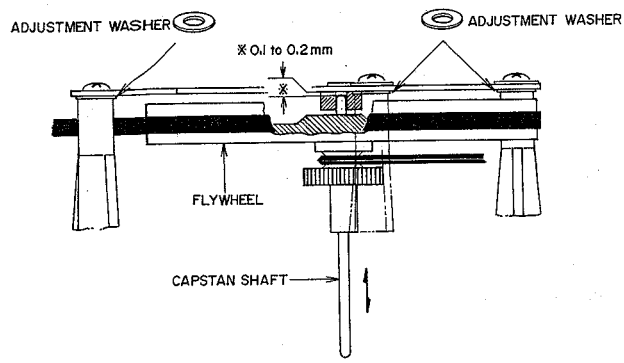



Fig. 19

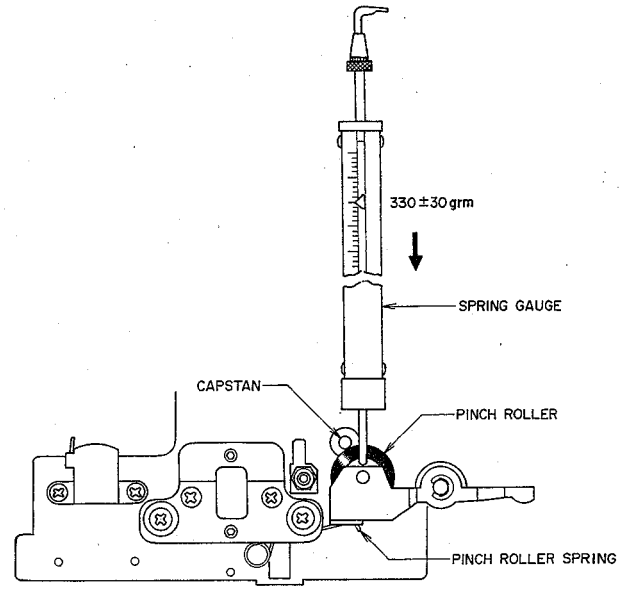



Fig. 20

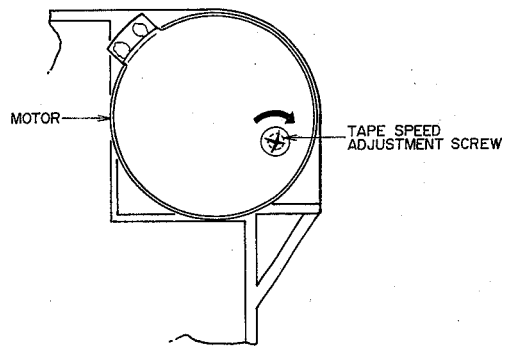



Fig. 21

## 3. FLYWHEEL LOOSE PLAY ADJUSTMENT (Refer to Fig. 19)

Insert the various washers in the three places between the prop and the flywheel hold plate and adjust to give 0.1 to 0.2 mm loose play when the flywheel is moved in the direction of the arrows.

## 4. PINCH ROLLER PRESSURE MEASUREMENT (Refer to Fig. 20)

At playback mode, push the pinch roller with a spring gauge until the pinch roller separates from the capstan by about 1 mm to 2 mm and then gently return. Take a reading of the spring gauge indication at the moment the pinch roller touches the capstan and begins to rotate

Specified Pinch Roller Pressure : 330 ± 30 grm

In case specified pressure cannot be attained, replace the pinch roller spring.

## 5. WINDING TORQUE MEASUREMENT IN EACH MODE

Insert cassette torque meter and measure in each mode.

For fast forward and rewind measure at the end of the tape when the tape has stopped running.

The specified torque is:

Playback : 35 to 60 g-cm

Fast Forward, Rewind : 80 to 120 g-cm

In case specified take-up torque cannot be attained.

Playback mode : Replace Take-up Reel Table Block.

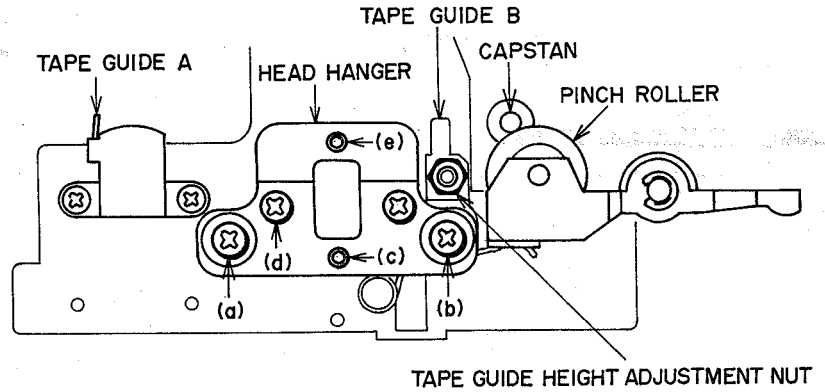
Fast Forward of Rewind mode :

Replace Middle Gear Block.

## 6. TAPE SPEED ADJUSTMENT (Refer to Fig. 21)

Connect the frequency counter to the line output terminals. Playback a 1,000 Hz pre-recorded test tape and adjust tape speed adjustment screw to obtain a tape speed of 1,000 Hz ± 1%.

# X. HEAD ADJUSTMENT



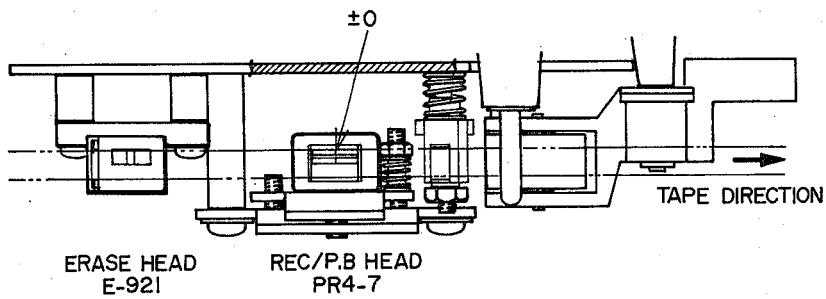




Fig. 22 Head Adjustment

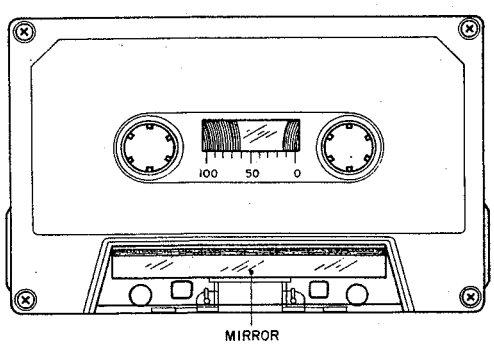



Fig. 23 Mirror Cassette

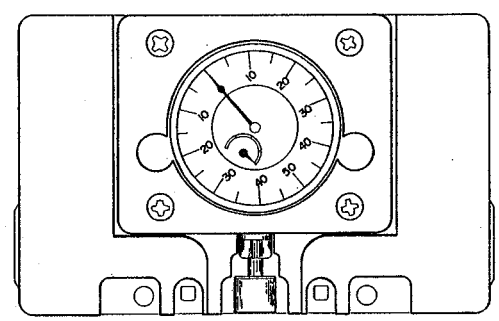


Fig. 24 AKAI Head Projection Gauge

## 1. TAPE GUIDE HEIGHT ADJUSTMENT (Refer to Figs. 22, 23)

1) When using an ordinary cassette, the tape guides and heads, etc. are not visible. As shown in Fig. 23 use a cassette tape from which part of the cassette case has been cut out and a mirror installed for easy visibility of the head area when making tape guide height adjustment.
2) At playback mode, using the tape guide (A) shown in Fig. 22 as standard for height, adjust tape guide (B) height with tape guide height adjustment nut so that the tape runs smoothly and does not catch on the tape guides.

## 2. REC/PB HEAD PROJECTION ADJUSTMENT

Set the AKAI Head Projection Gauge (Fig. 24) and adjust (a) and (b) screws (Fig. 22) so that it reads: 1.9 to 2.2 mm in the IPLS Mode, 3.55 ± 0.1 mm in the Play Mode.

**NOTE:** Raise or lower by exactly the same amount the head hanger's left and right and adjust so that the head does not lean to the left or right.

## 3. RECORDING/PLAYBACK HEAD HEIGHT ADJUSTMENT (Refer to Figs. 22, 23)

1) Utilize the cassette tape used in Tape Guide Height Adjustment above, and playback the leader tape part of cassette tape.
2) As shown in Fig. 22, adjust head height with screws (c), (d) and (e) until the upper edge of the tape is the same height as the upper edge of the left channel REC/PB head core.
3) After completing adjustment step 2), playback the Head Height Adjustment tape (4 track, 1,000 Hz) and adjust Head Height Adjustment screws (c), (d), (e) to put the output power from both channels to maximum.

## 4. RECORDING/PLAYBACK HEAD AZIMUTH ALIGNMENT ADJUSTMENT (Refer to Fig. 22)

1) Playback a 10 kHz pre-recorded cassette azimuth alignment test tape and adjust screw (d) shown in Fig. 22 to obtain maximum output on both channels.
2) Invert cassette and confirm that the output level does not change from that obtained in Item 4-1) above. If the output level differs, adjust in the same way as in Item 4-1) above until both sides of the test tape display equal output.
3) After adjustment, better to check again head height and azimuth alignment.

**NOTES:**

1. Be sure to clean the heads prior to head adjustment.
2. Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
3. Be sure to demagnetize the heads with a Head Demagnetizer before and after head adjustment.
4. When a mirror installed cassette test tape as shown in Fig. 24 is required, it can be ordered from AKAI Electric Co.

# XI. AMPLIFIER ADJUSTMENT

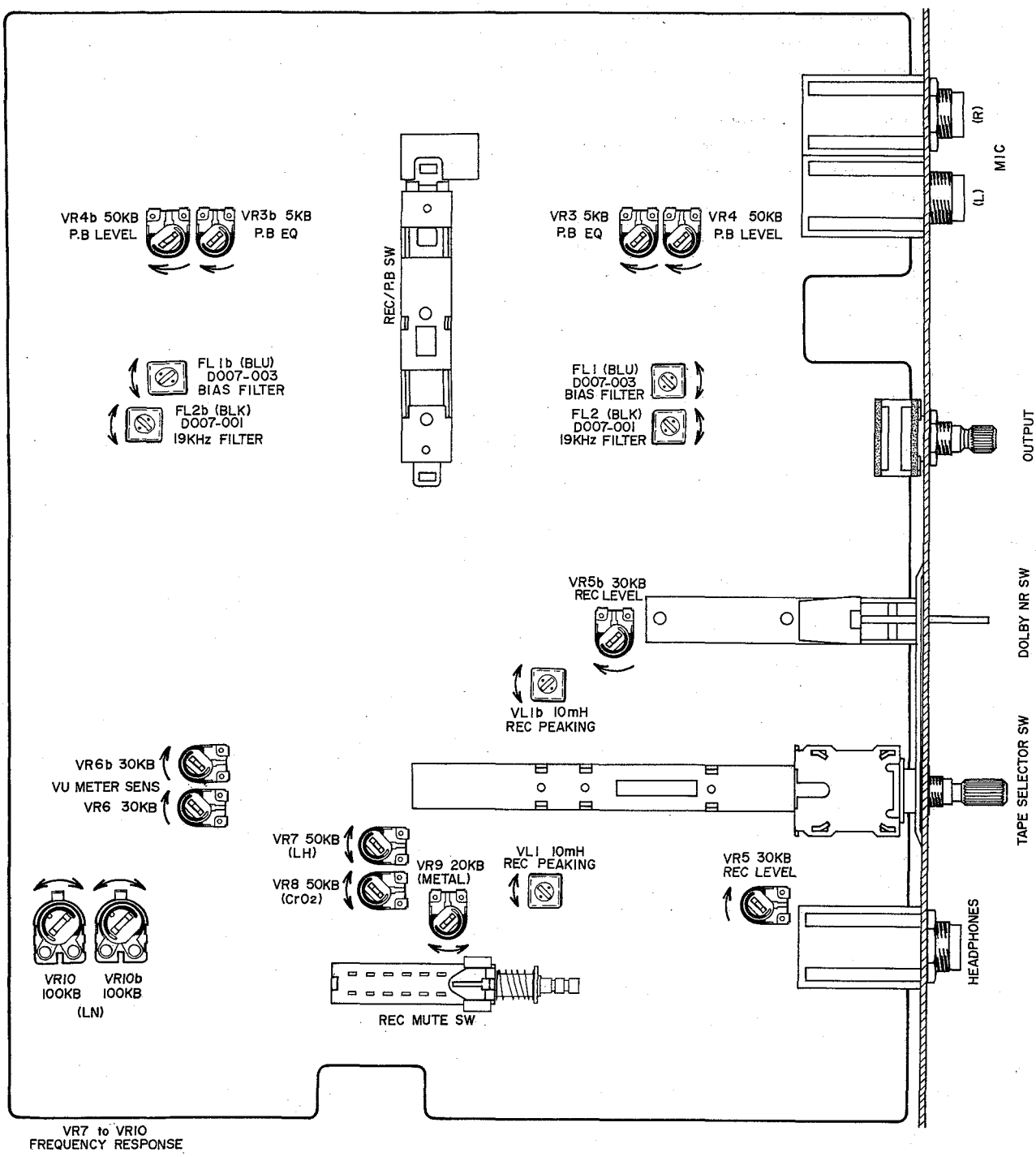



Fig. 25 Pre Amp P.C Board CE-5201A

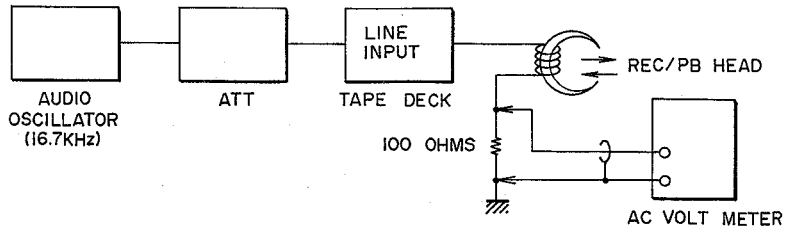
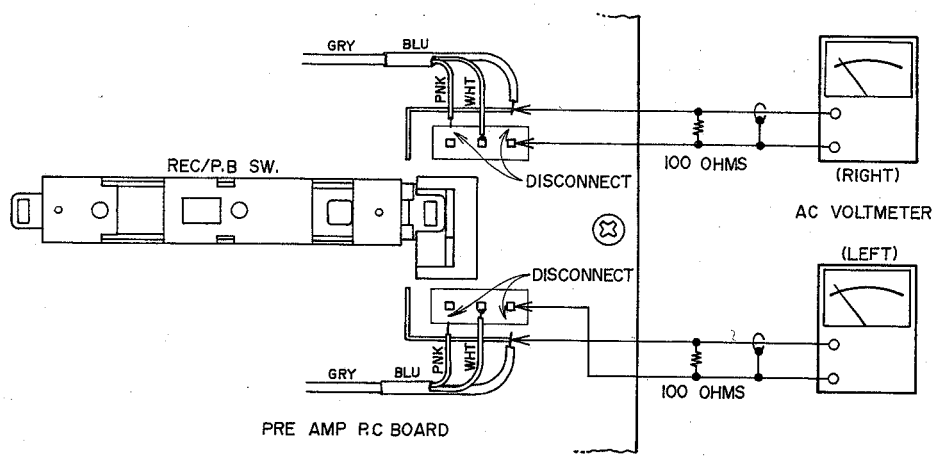



Fig. 26 Instruments Connection



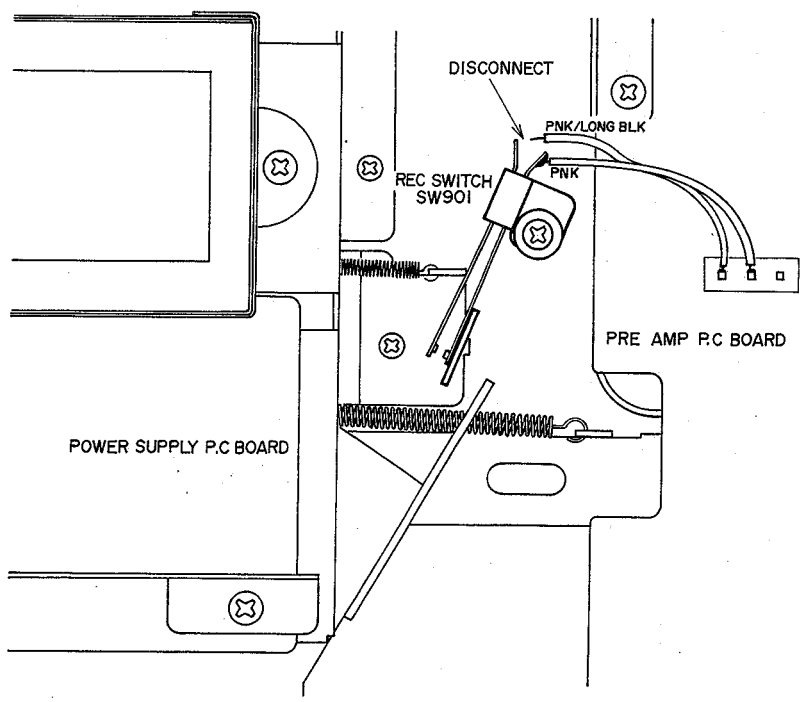




Fig. 27 Rec Peaking Adjustment

| Step | Adjustment Item | Test Tape Supply Signal | Mode | Adjustment Point | Result | Remarks |
|---|---|---|---|---|---|---|
| 1 | Playback Level | 333 Hz, 0 VU Test Tape | PB | VR 4 50 kB | −5.5 ± 0.5 dBm (410 mV) | |
| 2 | Bar Meter Sensitivity | 1,000 Hz −5.5 dBm from oscillator | REC | VR 6 30 kB | 0 VU indication | |
| 3 | Playback Equalizer | 10 kHz Test Tape | PB | VR 3 5 kB | −19.0 ± 0.5 dBm | |
| 4 | Rec Peaking adjustment | 16.7 kHz −25.5 dBm from oscillator | REC | VL 1 10 mH | AC Voltmeter indicates to maximum | Tape selector to LN. See the Figs. 25, 26, 27. NOTES 7, 10 |
| 5 | LN Position Frequency Response | Low Noise Blank tape. 1,000 Hz 10,000 Hz − 25.5 dBm recording | REC/PB | VR 10 100 kB | 1,000 Hz to 10,000 Hz flat | |
| 6 | LH Position Frequency Response | LH Blank tape 1,000 Hz 10,000 Hz −25.5 dBm recording | REC/PB | VR 7 50 kB | 1,000 Hz to 10,000 Hz flat | Set tape selector to LH Position |
| 7 | $CrO_2$ Position Frequency Response | $CrO_2$ Blank tape 1,000 Hz 10,000 Hz −25.5 dBm recording | REC/PB | VR 8 50 kB | 1,000 Hz to 10,000 Hz flat | Set tape selector to $CrO_2$ Position |
| 8 | Metal Position Frequency Response | Metal Blank tape 1,000 Hz 10,000 Hz −25.5 dBm recording | REC/PB | VR 9 20 kB | 1,000 Hz to 10,000 Hz flat | Set tape selector to Metal Position |
| 9 | Recording Level | LN Blank tape 1,000 Hz −5.5 dBm recording | REC/PB | VR 5 30 kB | −5.5 ± 0.5 dBm | Set the Mic Volume to Minimum |
| 10 | Distortion Factor Confirmation | 1,000 Hz −5.5 dBm recording | REC/PB | | LN < 0.8%<br>LH < 0.8%<br>$CrO_2$ < 0.7%<br>Metal < 0.6% | NOTE 8 |
| 11 | Bias Filter | No signal input | REC | FL 1 D07-003 | AC Voltmeter indicates to minimum | Set tape selector to Metal Position Set REC Volume to Maximum. NOTE 10 |
| 12 | 19 kHz Filter adjustment | 19 kHz from oscillator | REC | FL 2 D07-001 | AC Voltmeter indicates to minimum | Set Dolby NR Switch to ON, filter ON Position. NOTES 9, 10 |

Chart-3

**NOTES:**

1. The Output Level Control should be at maximum.
2. Input selector switch to LINE.
   (The JPN, AAL Models do not have this facility.)
3. Because each of these adjustments is vital to perfect Dolby NR circuit operation, ensure that they are carried out with as few errors as possible.
4. Except for Step 6 thru 8 and 10, set Tape Selector to LN Position.
5. Except for Step 12, set Dolby NR switch to OFF Position.
6. Use the following cassette measuring tapes:

| | | | | |
|---|---|---|---|---|
| LN tape | : | TDK | LN2 | C-60 |
| LH tape | : | Maxell | UD | C-60 |
| $CrO_2$ tape | : | TDK | SA | C-60 |
| Metal tape | : | TDK | MA-C | C-60 |

7. Stop the recording bias oscillator while making record peaking adjustment (Refer to Fig. 27).
8. If it does not comply with the specifications, repeat Steps 5 to 9 and readjust.
9. Adjust the oscillator's frequency to give a frequency counter reading of 19.00 kHz.
10. Unless the core is moved unintentionally this adjustment is not necessary.

# XII. DC RESISTANCE OF VARIOUS HEADS

| Parts | Designation | DC Resistance |
|---|---|---|
| REC/PB Head | PR4-7 | 650 ohms ± 10% |
| Erase Head | E-921 | 1.6 ohms ± 20% |

Chart-4

# XIII. CLASSIFICATION OF VARIOUS P.C BOARDS

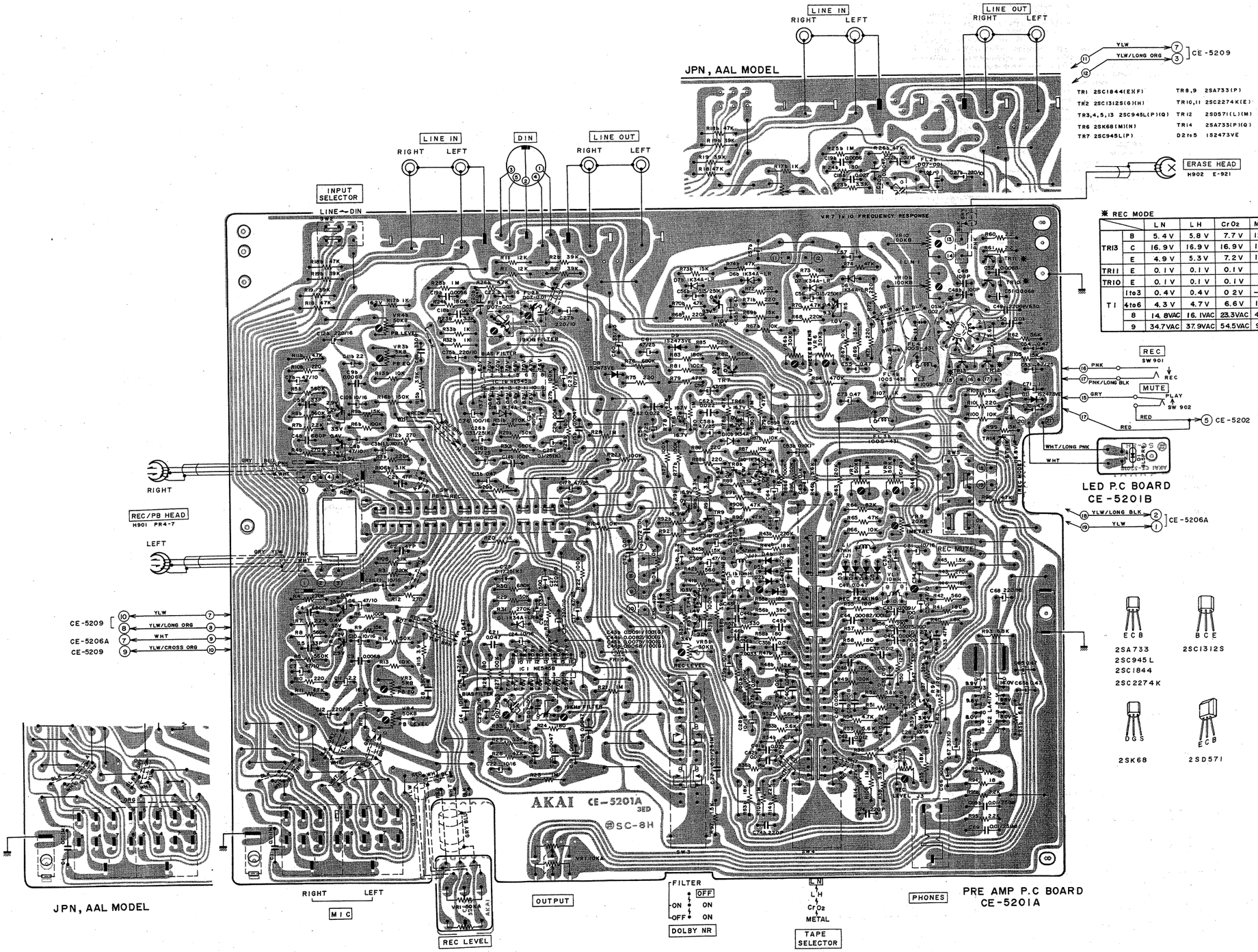
## 1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

| P.C Board Title | P.C Board Number |
|---|---|
| Pre Amp P.C Board | CE-5201A |
| Sys. Con P.C Board | CE-6206A |
| Power Supply P.C Board (U/T) | CE-5202 |
| Power Supply P.C Board (CEE, UK, SAA) | CE-5203 |
| Power Supply P.C Board (CSA, AAL) | CE-5204 |
| Power Supply P.C Board (JPN) | CE-5205 |
| Meter P.C Board | CE-5209 |
| Volume P.C Board | CE-5201C |
| Program LED P.C Board | CE-5206B |
| LED P.C Board | CE-5201B |
| Lamp P.C Board | CE-1078 |

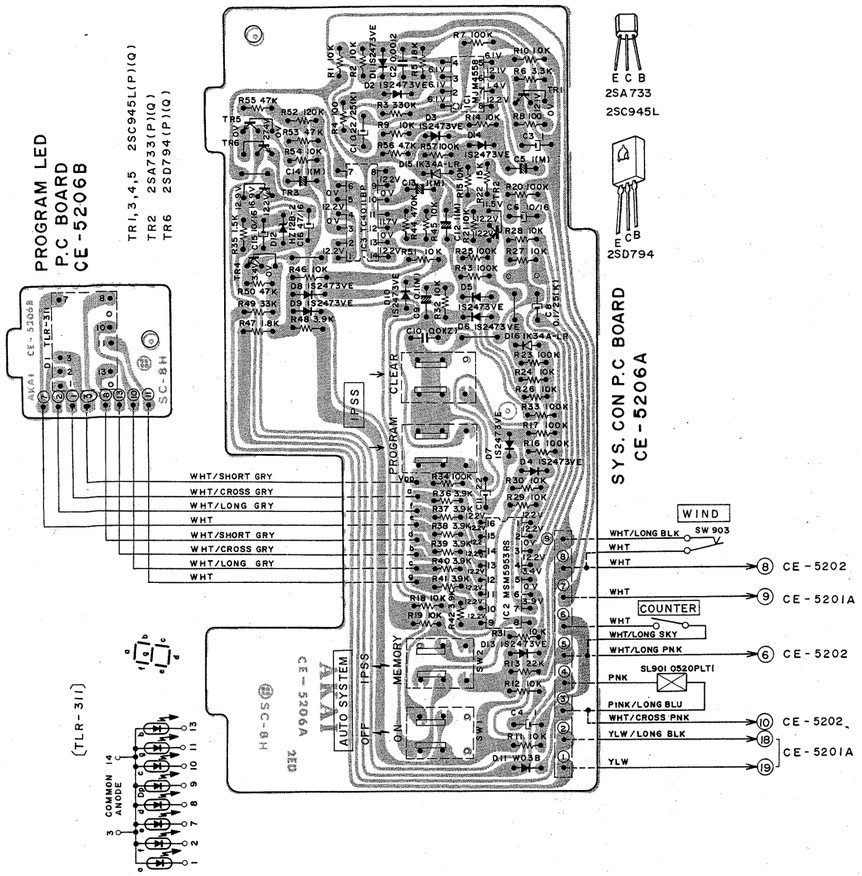
Chart-5

## 2. COMPOSITION OF VARIOUS P.C BOARDS

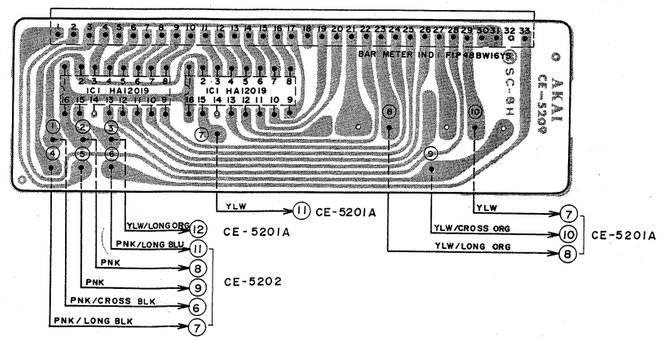
### 1) PRE AMP P.C BOARD CE-5201A (3ED), VOLUME P.C BOARD CE-5201C & LED P.C BOARD CE-5201B



## 2) SYS. CON P.C BOARD CE-5206A (2ED) & PROGRAM LED P.C BOARD CE-5206B

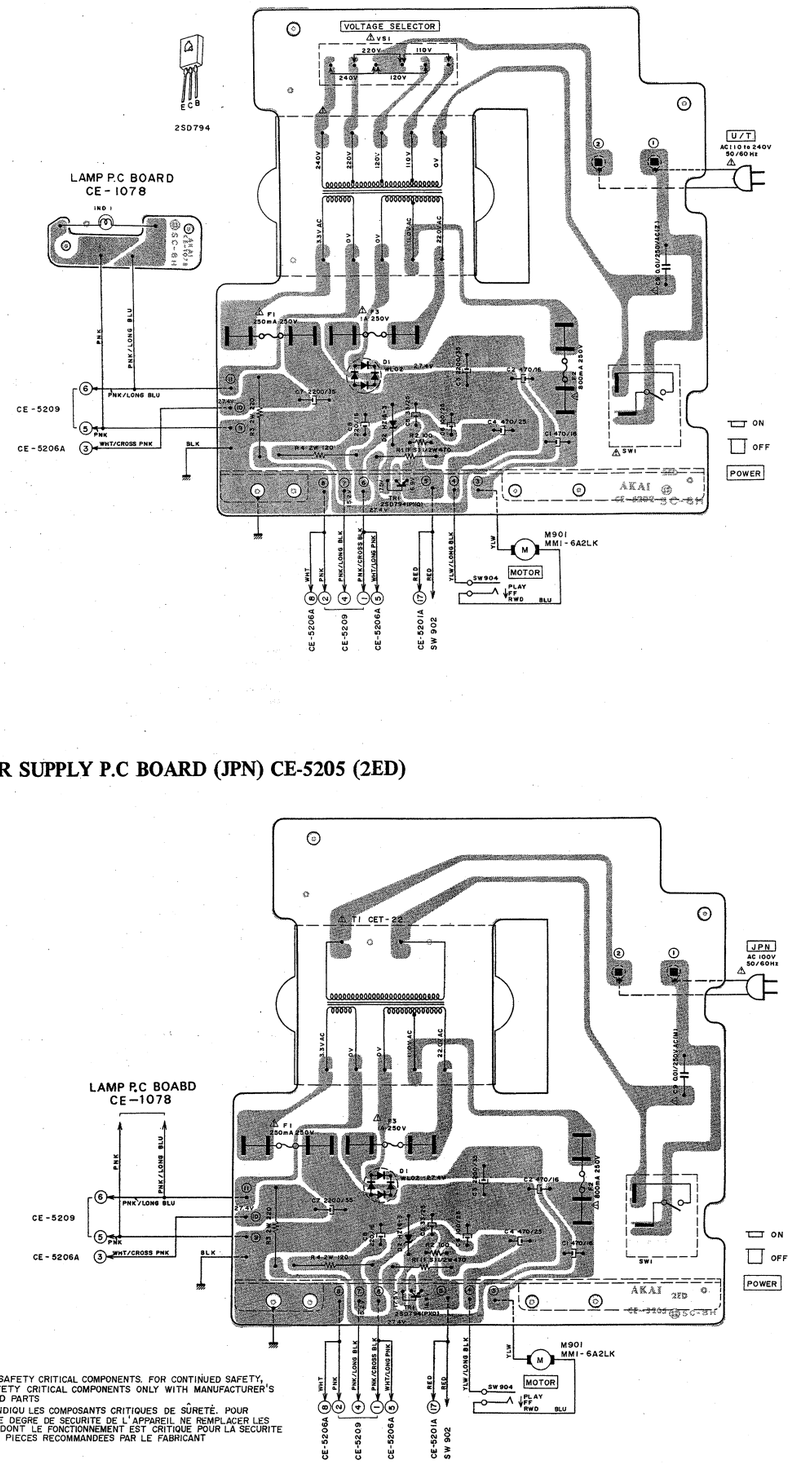



## 3) METER P.C BOARD CE-5209






## 4) POWER SUPPLY P.C BOARD (U/T) CE-5202 (2ED) & LAMP P.C BOARD CE-1078



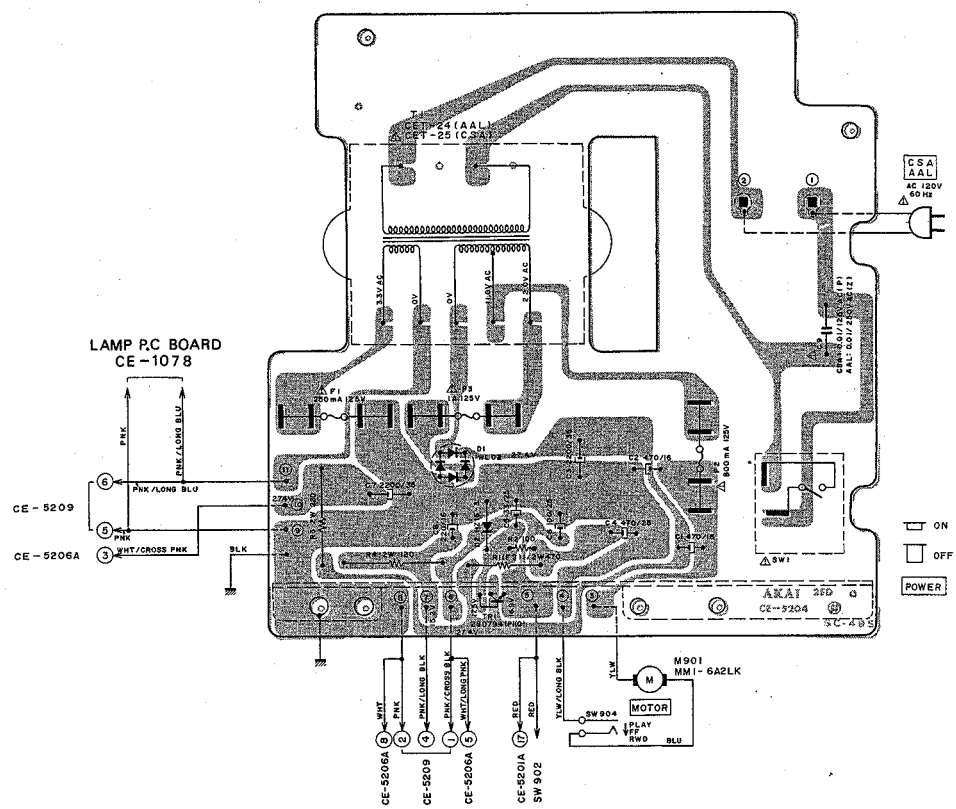

## 5) POWER SUPPLY P.C BOARD (JPN) CE-5205 (2ED)



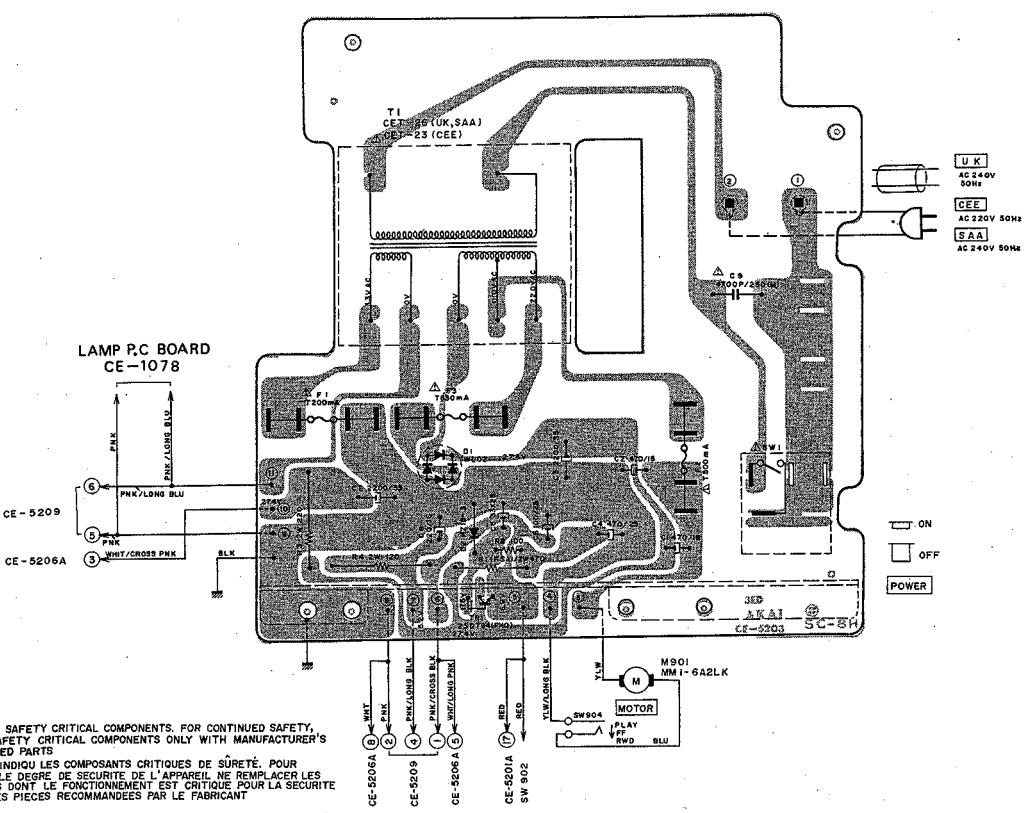

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRÉ DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

## 6) POWER SUPPLY P.C BOARD (CSA, AAL) CE-5204 (2ED)




## 7) POWER SUPPLY P.C BOARD (CEE, UK, SAA) CE-5203 (2ED)




WARNING: △INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: △IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

SECTION 2

# PARTS LIST

TABLE OF CONTENTS

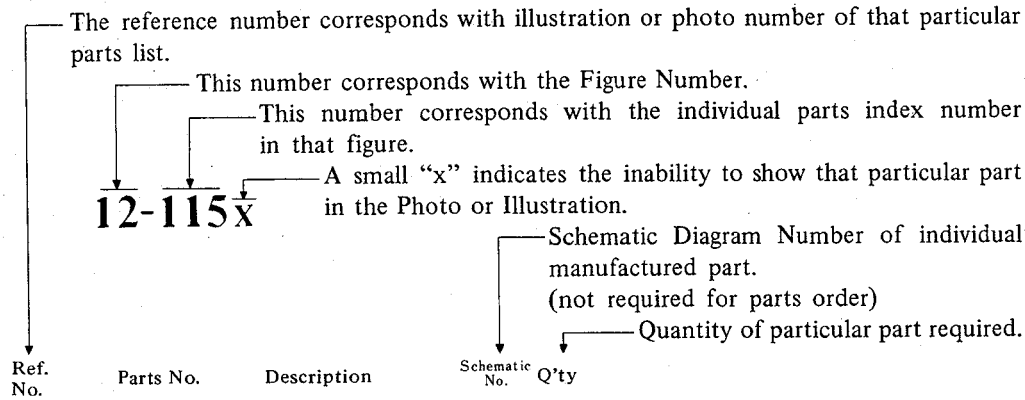

1. RECOMMENDED SPARE PARTS LIST ..... 38
2. HEAD BLOCK ..... 40
3. MECHA ASSEMBLY BLOCK (1) ..... 41
4. MECHA ASSEMBLY BLOCK (2) ..... 42
5. PRE AMP (NEW) P.C BOARD (CE-5201A) BLOCK ..... 44
6. SYS. CON (NEW) P.C BOARD (CE-5206A) BLOCK ..... 45
7. POWER SUPPLY (A/B) P.C BOARD (CE-5202/5205) BLOCK ... 45
8. BAR METER P.C BOARD (CE-5209) BLOCK ..... 45
9. ASSEMBLY BLOCK ..... 46
10. FINAL ASSEMBLY BLOCK ..... 48

INDEX ..... 50


Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

## HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read List


The reference number corresponds with illustration or photo number of that particular parts list.
This number corresponds with the Figure Number.
This number corresponds with the individual parts index number in that figure.
A small "x" indicates the inability to show that particular part in the Photo or Illustration.
12-115x
Schematic Diagram Number of individual manufactured part.
(not required for parts order)
Quantity of particular part required.

| Ref. No. | Parts No. | Description | Schematic No. | Q'ty |
|---|---|---|---|---|
| | | **FLYWHEEL BLOCK #13** | | |
| 12-115x | 800425 | Flywheel Block Assy. Comp. | RDG #13 | 1 |
| 12-116 | 244506 | Flywheel Only | RD-233 | 1 |
| 12-117x | 244754 | Felt, Flywheel | RD-275 | 1 |
| 12-118 | 251324 | Main Metal Case | RD-236 | 1 |
| 12-119 | 253080 | Main Metal | RD-237 | 1 |

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of Components of the Schematic Diagram or Service Manual.
5. Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

CAUTION:
1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

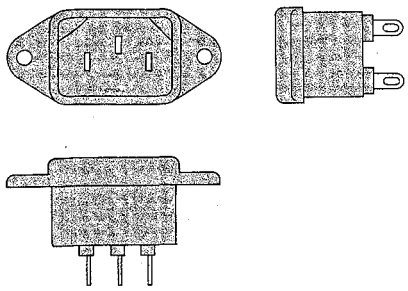
AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

## AC INLET SYSTEM

This model is equipped with an AC INLET SYSTEM. Please refer to the AC INLET SYSTEM CHART below for the specific type. By the AC INLET SYSTEM, AC (mains) cord can be connected to and disconnected from the model because the model is provided with socket exclusively for AC (mains) cord on its main body.
Please note, however, that certain models are not equipped with this system and has a built-in AC (mains) cord as before.

## AC INLET SYSTEM CHART

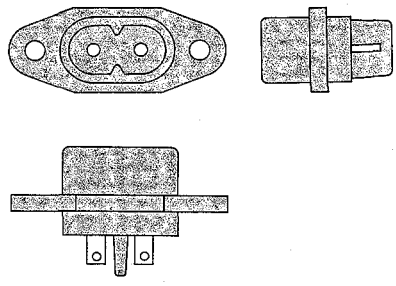
### CLASS I

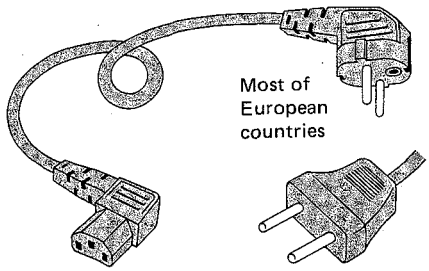


Picture 1
AC INLET to be installed on machines

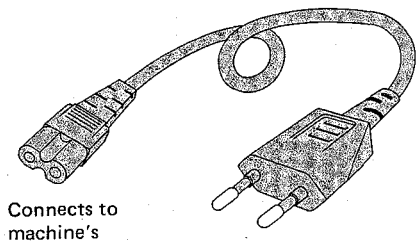
### CLASS II

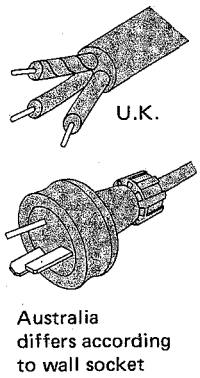
⧈ This mark indicating double insulation will be attached to machine's rear panel

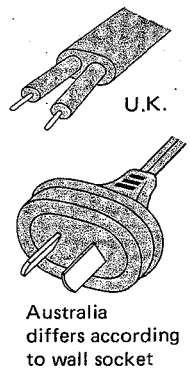





Picture 2
AC (mains) cord




**Parts List for AC (mains) Cord Set**

| Standard | | Description | Type of AC Inlet | Parts No. |
|---|---|---|---|---|
| Class I | CEE | Cord Set CEE (3 cores) | 3P | EW302993 |
| | BEAB | Cord Set BEAB (3 cores) | 3P | EW302994 |
| | SAA | Cord Set SAA (3 cores) | 3P | EW302996 |
| | U/T | Cord Set U/T (3 cores) | 3P | EW302646 |
| Class II | CEE | Cord Set CEE (2 cores) | 2P | EW638144 |
| | BEAB | Cord Set BEAB (2 cores) | 2P | EW302995 |
| | SAA | Cord Set SAA (2 cores) | 2P | EW302991 |
| | U/T | Cord Set U/T (2 cores) | 2P | EW302899 |

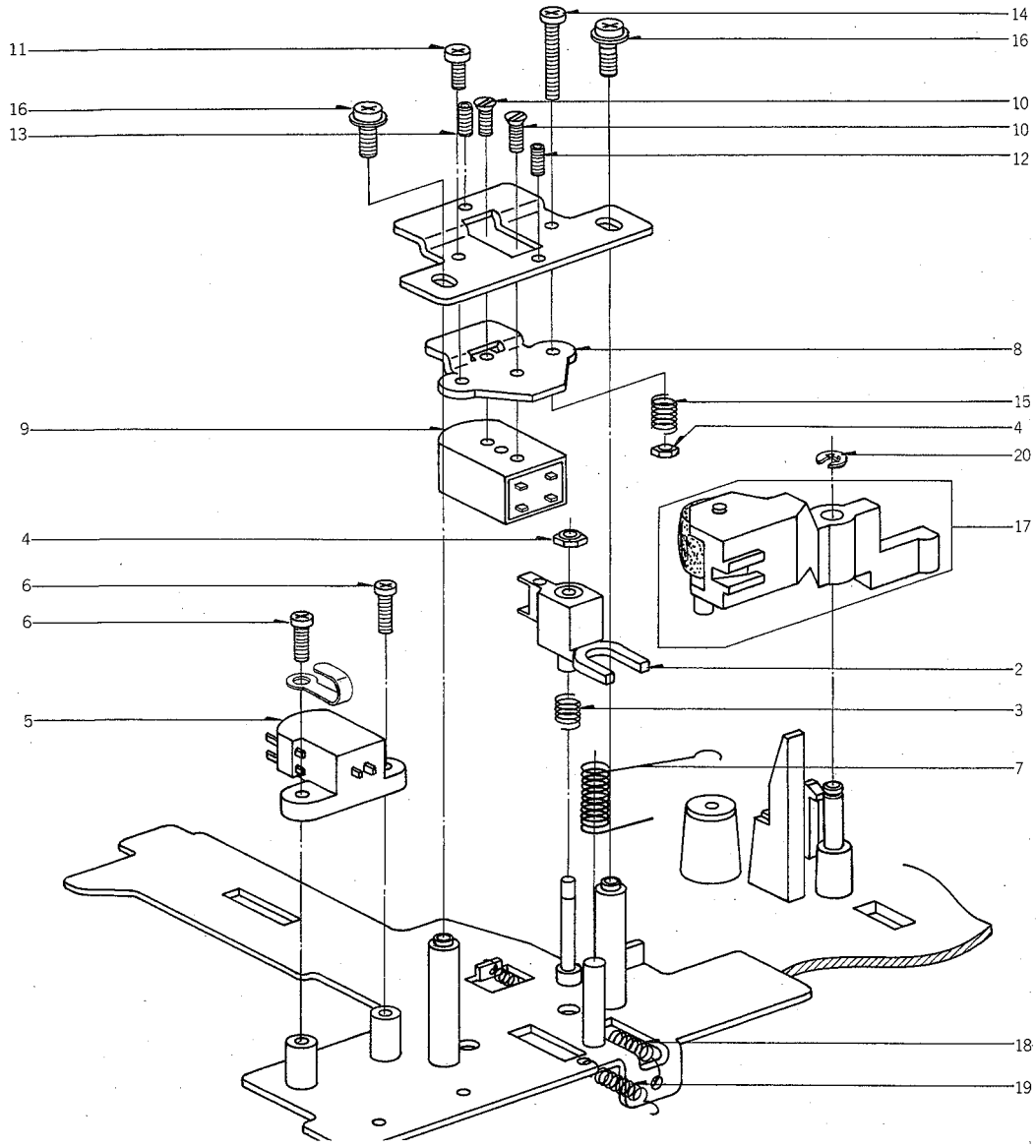
## 1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

| Parts No. | Description | Notes |
|---|---|---|
| BA326004 | Power Supply (A) P.C Board Comp. GX-M10 (U/T) | |
| BA326005 | Power Supply (B) P.C Board Comp. GX-M10 (JPN) | |
| BA326007 | Power Supply (B) P.C Board Comp. GX-M10 (AAL) | |
| BA326006 | Power Supply (B) P.C Board Comp. GX-M10 (CSA) | |
| BA326008 | Power Supply (C) P.C Board Comp. GX-M10 (CEE) | CEE, UK, SAA |
| BA326010 | Pre Amp (New) P.C Board Comp. GX-M10 (JPN) | AAL, JPN |
| BA326016 | Pre Amp (New) P.C Board Comp. GX-M10 (U/T) | U/T, CSA, CEE, UK, SAA |
| BA326002 | Sys. Con (New) P.C Board Comp. GX-M10 | |
| BL319692 | Pinch Roller BLK GX-M10 | |
| BM319691 | Motor BLK GX-M10 | |
| BR321540 | Take-up Reel Table BLK | |
| BT321222 | ⚠ Power Trans. CET-21 | U/T |
| BT321223 | ⚠ Power Trans. CET-22 | JPN |
| BT321224 | ⚠ Power Trans. CET-23 | CEE |
| BT321225 | ⚠ Power Trans. CET-24 | AAL |
| BT321226 | ⚠ Power Trans. CET-25 | CSA |
| BT321227 | ⚠ Power Trans. CET-26 | UK, SAA |
| BZ321547 | Take-up Idler BLK | |
| ED308952 | Germanium Diode 1K34A-LR | |
| ED321269 | LED GL5PR6 | |
| ED315960 | Silicon Diode WL02 | |
| ED306109 | Silicon Diode W03B | |
| ED560913 | Silicon Diode 1S2473 VE | |
| ED310387 | Zener Diode HZ12B-2 | |
| ED313846 | Zener Diode HZ16-3 | |
| ED321347 | 7 Segment LED TLR-331 | |
| EF310229 | ⚠ Fuse 1A 125V | CSA, AAL |
| EF309387 | ⚠ Fuse 1A 250V | U/T, JPN |
| EF315334 | ⚠ Fuse 250MA 125V | CSA, AAL |
| EF321323 | ⚠ Fuse 250MA 250V | U/T, JPN |
| EF309391 | ⚠ Fuse 800MA 125V | CSA, AAL |
| EF309388 | ⚠ Fuse 800MA 250V | U/T, JPN |
| EF300588 | ⚠ Fuse (EAWK) | CEE, UK, SAA |
| EF593706 | ⚠ Fuse (SEMKO T Type) 500MAT | CEE, UK, SAA |
| EF601942 | ⚠ Fuse (SEMKO T Type) 630MAT | CEE, UK, SAA |
| EI605013 | IC NE545B | |
| EI315799 | IC HA12019 | |
| EI306141 | IC LA4170 | |
| EI321346 | IC MSM5953RS | |
| EI213390 | IC NJM4558D | |
| EI304657 | IC TC4011BP | |
| EL321321 | Lamp (Fuse Type) 3V 75MA | |
| EM321312 | Bar Meter FIP48BW16YS | |
| EO321268 | OSC Coil OSM-002 | |
| EP321319 | Plunger 0520PLTI | |
| ER309119 | Dolby Filter D07-001 | |

| Parts No. | Description | Notes |
|---|---|---|
| ER309120 | Dolby Filter D07-003 | |
| ES315159 | ⚠ Push SW. SDG1P (JPN) | JPN |
| ES310839 | ⚠ Push SW. SDG1P-E 5A/80A 250V | U/T |
| ES665875 | ⚠ Push SW. SDG1P-J TV-3 UL/CSA | AAL |
| ES655806 | ⚠ Push SW. SDG1P-J TV-3 CSA | CSA |
| ES665807 | ⚠ Push SW. SDG5P-E 5A/80A 250V | |
| ES301747 | Leaf SW. BSW-1 TX-2 | |
| ES317622 | Leaf SW. BSW-47PB | |
| ES283173 | Leaf SW. BUW-31PLC | |
| ES321310 | Leaf SW. TX-3 | |
| ES321274 | Lever SW. 63349 | |
| ES321212 | Push SW. SUF-41 | |
| ES316533 | Push SW. SUF-12 | |
| ES321266 | Rotary Slide SW. SRZ-W04S | |
| ES283072 | Slide SW. SSC22LP | U/T, CSA, CEE, UK, SAA |
| ES316535 | Slide SW. 142031 | |
| ET301464 | FET 2SK68 (M) (N) | |
| ET539133 | Transistor 2SA733 (P) | |
| ET554657 | Transistor 2SA733 (P) (Q) | |
| ET603257 | Transistor 2SC1312S (G) (H) | |
| ET308954 | Transistor 2SC1844 (E) (F) | |
| ET310833 | Transistor 2SC2274K (E) | |
| ET638504 | Transistor 2SC945L (P) | |
| ET639437 | Transistor 2SC945L (Q) (P) | |
| ET655356 | Transistor 2SD571 (L) (M) | |
| ET307349 | Transistor 2SD794 (P) (Q) | |
| EV321263 | Double-Axial 2-Throw/Vol. V16L4DG8N 50kAx2 | |
| EW306427 | ⚠ AC Cord (JPN) | |
| EW306428 | ⚠ AC Cord (U/T) | |
| EW313884 | ⚠ AC Cord BASEC | UK |
| EW305691 | ⚠ AC Cord CUL | CSA, AAL |
| EW313882 | ⚠ AC Cord EC | CEE |
| EW313883 | ⚠ AC Cord SAA | SAA |
| HE315742 | Erase Head E-921 | |
| HP319079 | REC/PB Head PR4-7 | |
| MB321391 | AS Belt | |
| MB321389 | Capstan Belt | |
| MB321392 | Counter Belt | |
| MC321325 | Counter SMP393-05 | |
| MC321324 | Counter SMP393-06 | BL |
| MI319709 | Flywheel Part GX-M10 | |
| ML319693 | AS Arm Assy | |
| MZ283140 | ⚠ Voltage Changer 12M-60031 | U/T |

## 2. HEAD BLOCK

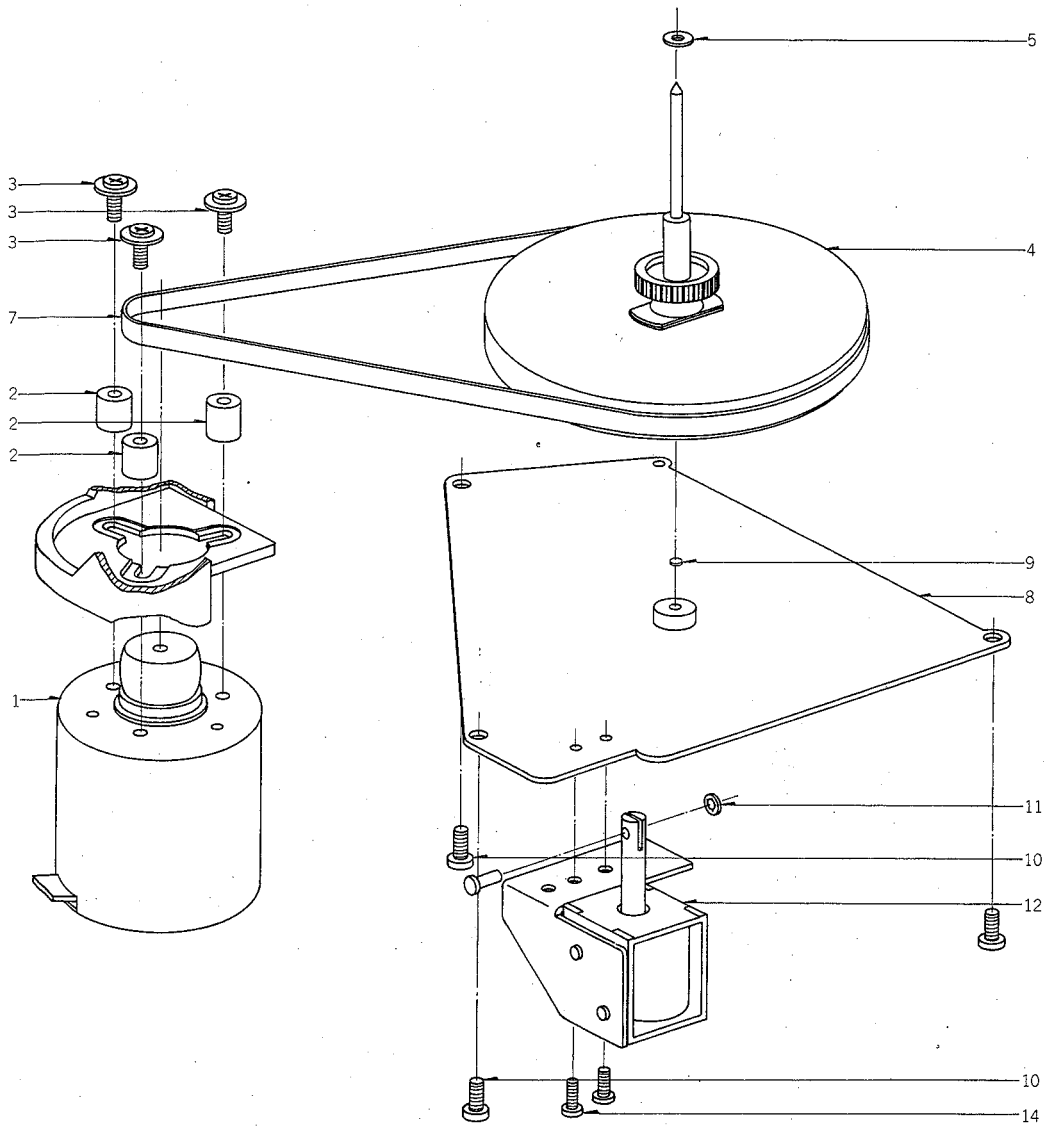



### HEAD BLOCK

| Ref. No. | Parts No. | Description | Schematic No. |
|---|---|---|---|
| 2-1 | BH319689 | Head BLK GX-M10 | |
| 2-2 | HZ309128 | Tape Guide | CF-0006 |
| 2-3 | ZG289236 | Tape Guide Spring | CM-0005 |
| 2-4 | ZW313501 | Nut #2 M2.3 | |
| 2-5 | HE315742 | Erase Head E-921 | 37-2-25 |
| 2-6 | ZS419940 | Screw, Pan 2.3x6 | |
| 2-7 | ZG321536 | Pinch Spring (B) | CE-0010 |
| 2-8 | HZ316252 | Head Angle | CM-0304 |
| 2-9 | HP319079 | REC/PB Head PR4-7 | |
| 2-10 | ZS524812 | Screw, countersunk 2x4 | |
| 2-11 | ZS590804 | Screw, pan 2.3x6 | |
| 2-12 | ZS499454 | Set Screw, Hexagon Socket 2.6x3 (CUP/P.) | |
| 2-13 | ZS521987 | Set Screw, Hexagon Socket 2.6x4 (CUP/P.) | |
| 2-14 | ZS462947 | Screw, Pan 2.3x12 | |
| 2-15 | ZG465636 | Angle Adjust Spring | CG-0029 |
| 2-16 | ZS283454 | Screw, Pan 2.6x6 W=5 | |
| 2-17 | BL319692 | Pinch Roller BLK GX-M10 | CE-1202 |
| 2-18 | ZG312945 | Coil Spring T1-3.2/0.29-14.0 | CE-1083 |
| 2-19 | ZG321535 | PB Spring | 6-1-9 |
| 2-20 | ZW357164 | 'E' Ring 2.3M | |

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

## 3. MECHA ASSEMBLY BLOCK (1)

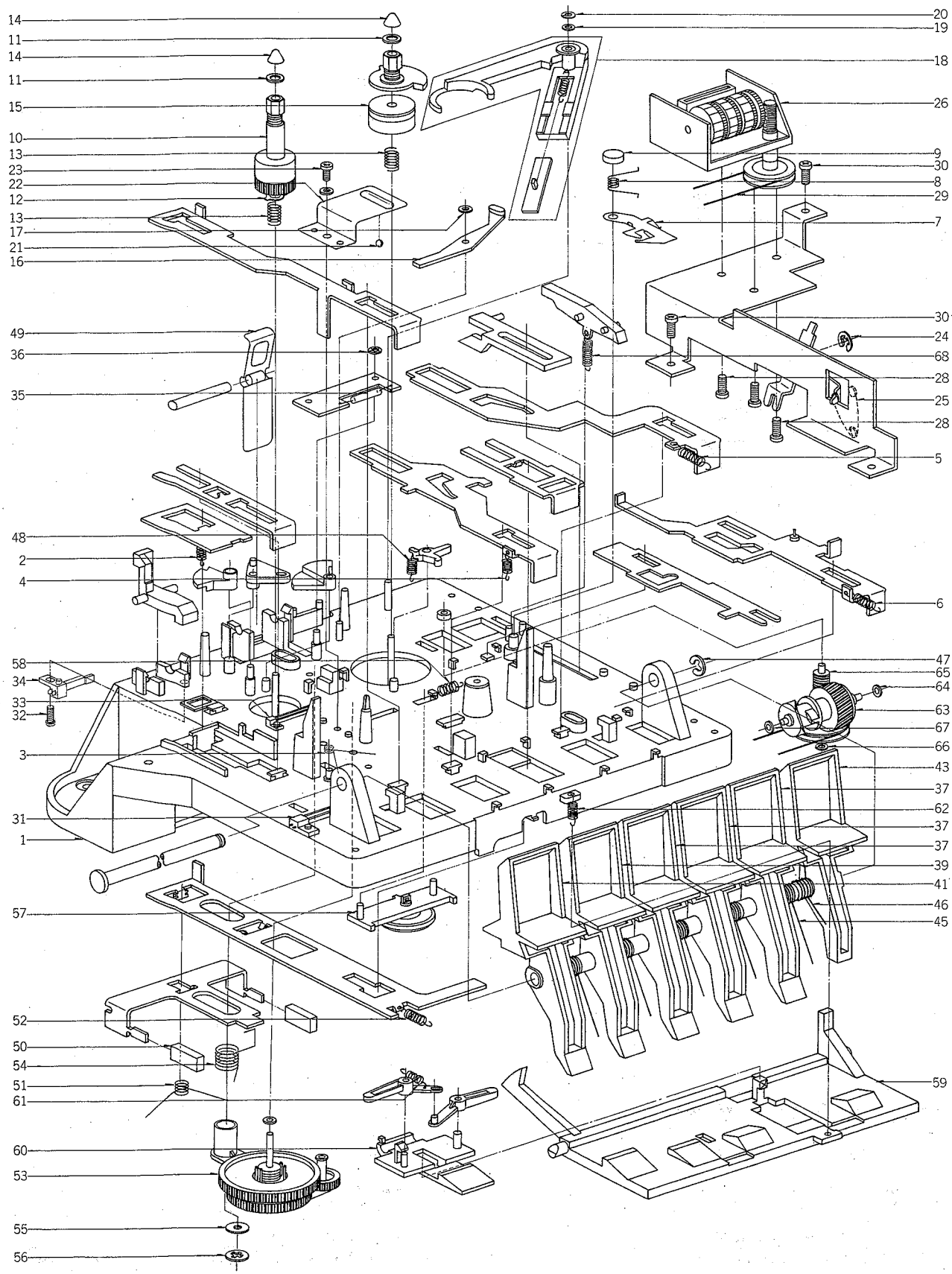



## MECHA ASSEMBLY BLOCK (1)

| Ref. No. | Parts No. | Description | Schematic No. |
|---|---|---|---|
| | | **MOTOR BLOCK** | |
| 3-1 | BM319691 | Motor BLK GX-M10 | CE-7201 |
| | | **MECHA ASSEMBLY BLOCK** | |
| 3-2 | MB282778 | Rubber Bush | CN-7003 |
| 3-3 | ZS321338 | Motor Screw | 7-1-75 |
| 3-4 | MI319709 | Flywheel Part GX-M10 | CE-1025 |
| 3-5 | ZW269335 | Washer (Nylon) D2.3x6x0.3t | |
| 3-6x | MB321391 | AS Belt | CE-1028 |
| 3-7 | MB321389 | Capstan Belt | CE-1027 |
| 3-8 | MI319686 | Flywheel Hold Plate (B) Part GX-M10 | CE-1061 |
| 3-9 | ZW321424 | Thrust Washer | CE-1063 |
| 3-10 | ZS322402 | Special Tapping Screw, Pan 3x8 | 7-1-70 |
| 3-11 | ZW321437 | Push Washer | CE-1077 |
| 3-12 | EP321319 | Plunger 0520PLTI | 44-1-118 |
| 3-13x | ZS477876 | Screw, Pan 2x3 | |
| 3-14 | ZS432843 | Screw, Pan 2.6x4 | |

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

## 4. MECHA ASSEMBLY BLOCK (2)



## MECHA ASSEMBLY BLOCK (2)

| Ref. No. | Parts No. | Description | Schematic No. |
|---|---|---|---|
| 4-1 | TC319723 | Chassis Part GX-M10 | CE-1001 |
| 4-2 | ZG312926 | Coil Spring T1-3.2/0.2-16.0 | |
| 4-3 | ZG321373 | Stop Spring | CE-1007 |
| 4-4 | ZG312943 | Coil Spring T1-3.2/0.29-11.2 | |
| 4-5 | ZG324329 | Coil Spring T2-3.2/0.29-11.2 | |
| 4-6 | ZG324330 | Pause Spring | CE-1085 |
| 4-7 | MZ321396 | Lock Cam | CE-1034 |
| 4-8 | ZG514440 | Button Lock Sprin (B) | CG-2303 |
| 4-9 | TC282396 | Cap | CN-1055 |
| 4-10 | BR321539 | Supply Reel Table BLK | 9-3-60 |
| 4-11 | ZW381644 | Washer(Polyslider) D2.1x4x0.13t | |
| 4-12 | ZW321393 | BT Washer (Polyslider) | CE-1030 |
| 4-13 | ZG321538 | BT Spring | CE-1081 |
| 4-14 | MT305793 | Reel Cap | CF-2039 |
| 4-15 | BR321540 | Take-up Reel Table BLK | 9-3-61 |
| 4-16 | ML321404 | Release Lever | CE-1043 |
| 4-17 | ZW340648 | Clip (CS Type) CSTW-2 | 6-1-14 |
| 4-18 | ML319693 | AS Arm Assy | CE-1203 |
| 4-19 | ZW305546 | Washer(Polyslider) D2.1x4x0.25t | |
| 4-20 | ZW321437 | Push Washer | CE-1077 |
| 4-21 | MV368886 | Steel Ball D3 | |
| 4-22 | ZG321384 | Hold Spring | CE-1021 |
| 4-23 | ZS310343 | Special Tapping Screw, Pan 3x6 | 7-1-70 |
| 4-24 | ZW270101 | 'E' Ring 3M | 6-1-9 |
| 4-25 | ZG321411 | Timer Spring | CE-1050 |
| 4-26 | MC321325 | Counter SMP393-05 | 9-1-75 |
| 4-27x | MC321324 | Counter SMP393-06 | 9-1-76 |
| 4-28 | ZS417216 | Screw, Pan 3x4 (BL) | |
| 4-29 | MB321392 | Counter Belt | CE-1029 |
| 4-30 | ZS322402 | Special Tapping Screw, Pan 3x8 | 7-1-70 |
| 4-31 | ES283173 | Leaf SW. BUW-31PLC | 25-10-26 |
| 4-32 | ZS321320 | B-Tight Screw, Pan 2x6 | |
| 4-33 | ES321310 | Leaf SW. TX-3 | 25-10-39 |
| 4-34 | ES317622 | Leaf SW. BSW-47PB | 25-10-40 |
| 4-35 | EL321321 | Lamp (Fuse Type) 3V 75MA | 28-2-76 |
| 4-36 | ZW340648 | Clip (CS Type) CSTW-2 | 6-1-14 |
| 4-37 | TC321362 | Key Board (A) | CE-1002 |
| 4-38x | TC321363 | Key Board (A-BL) | CE-1002 |
| 4-39 | TC321364 | Key Board (D) | CE-1002 |
| 4-40x | TC321365 | Key Board (D-BL) | CE-1002 |
| 4-41 | TC321367 | Key Board (B) | CE-1003 |
| 4-42x | TC321368 | Key Board (B-BL) | CE-1003 |
| 4-43 | TC321369 | Key Board (C) | CE-1004 |
| 4-44x | TC321370 | Key Board (C-BL) | CE-1004 |
| 4-45 | ZG321430 | Key Board Spring (A) | CE-1069 |
| 4-46 | ZG321431 | Key Board Spring (B) | CE-1070 |
| 4-47 | ZW270123 | 'E' Ring 4M | 6-1-9 |
| 4-48 | ZG321544 | Relay Lever Spring | CE-1082 |
| 4-49 | MZ321417 | Cassette Holder | CE-1055 |
| 4-50 | TC321415 | Brake Shoe | CE-1053 |
| 4-51 | ZG321416 | Brake Spring | CE-1054 |
| 4-52 | ZG318228 | Coil Spring T2-3.2/0.29-14 | |
| 4-53 | BZ321546 | Middle Gear BLK | 9-3-62 |
| 4-54 | ZG325100 | Gear Return Spring | CE-1087 |
| 4-55 | ZW460787 | Washer(Polyslider) D3.1x8x0.25t | |
| 4-56 | ZW653163 | Retaining Ring CS CSTW-3 | 6-1-14 |
| 4-57 | BZ321547 | Take-up Idler BLK | 9-3-63 |
| 4-58 | ZG312920 | Coil Spring T1-3.2/0.2-8.0 | |
| 4-59 | MZ321418 | Key Board Cam | CE-1056 |
| 4-60 | MZ321419 | PB Cam | CE-1057 |
| 4-61 | ZG321549 | Coil Spring T2-3.2/0.2-10.0 | |
| 4-62 | ZG321548 | Key Board Cam Spring | CE-1084 |
| 4-63 | TC319724 | Worm Gear Part GX-M10 | CE-1039 |
| 4-64 | ZW321317 | Washer(Polyslider) D2.1x4x0.5t | |
| 4-65 | MR321403 | Warm Pulley | CE-1042 |
| 4-66 | ZW321437 | Push Washer | CE-1077 |
| 4-67 | ZW305546 | Washer(Polyslider) D2.1x4x0.25t | |
| 4-68 | ZG321303 | Coil Spring T2-3.2/0.2-18.0 | |
| 4-69x | ZS322402 | Special Tapping Screw, Pan 3x8 | 7-1-70 |

## 5. PRE AMP (NEW) P.C BOARD (CE-5201A) BLOCK

| Symbol No. | Parts No. | Description | Schematic No. |
|---|---|---|---|
| 5-1 | BA326016 | Pre Amp (New) P.C Board Comp GX-M10(U/T) (U/T, CA, CE, UK, SAA) | CE-5201A |
| 5-2 | BA326010 | Pre Amp (New) P.C Board Comp GX-M10 (JPN) (JPN, AAL) | CE-5201A |
| 5-IC1 | EI605013 | IC NE545B | 45-8-117 |
| 5-IC2 | EI306141 | IC LA4170 | 45-8-305 |
| 5-TR1 | ET308954 | Transistor 2SC1844(E)(F) | 45-1-327 |
| 5-TR2 | ET603257 | Transistor 2SC1312S(G)(H) | 45-1-182 |
| 5-TR3to5 | ET639437 | Transistor 2SC945L(Q)(P) | 45-1-85 |
| 5-TR6 | ET301464 | FET 2SK68(M)(N) | 45-12-14 |
| 5-TR7 | ET638504 | Transistor 2SC945L(P) | 45-1-85 |
| 5-TR8,9 | ET539133 | Transistor 2SA733(P) | 45-1-124 |
| 5-TR10,11 | ET310833 | Transistor 2SC2274K(E) | 45-1-335 |
| 5-TR12 | ET655356 | Transistor 2SD571(L)(M) | 45-1-218 |
| 5-TR13 | ET639437 | Transistor 2SC945L(Q)(P) | 45-1-85 |
| 5-TR14 | ET554657 | Transistor 2SA733(P)(Q) | 45-1-124 |
| 5-D1 | ED308952 | Germanium Diode 1K34A-LR | 45-3-47 |
| 5-D2to5 | ED560913 | Silicon Diode 1S2473 VE | 45-3-23 |
| 5-D6,7 | ED308952 | Germanium Diode 1K34A-LR | 45-3-47 |
| 5-D8,9 | ED560913 | Silicon Diode 1S2473 VE | 45-3-23 |
| 5-D10 | ED308952 | Germanium Diode 1K34A-LR | 45-3-47 |
| 5-D11 | ED560913 | Silicon Diode 1S2473 VE | 45-3-23 |
| 5-J1 | EJ321328 | Jack HLJ0345-01-010 | 31-2-110 |
| 5-J3 | EJ316156 | Head Phone Jack HLJ0315-01-020 | 31-2-106 |
| 5-SW1 | ES316535 | Slide SW. 142031 | 25-3-177 |
| 5-SW2 | ES283072 | Slide SW. SSC22LP | 25-3-131 |
| 5-SW3 | ES321274 | Lever SW. 63349 | 25-12-65 |
| 5-SW4 | ES321266 | Rotary Slide SW. SRZ-W04S | 25-6-183 |
| 5-SW5 | ES316533 | Push SW. SUF12 | 25-5-335 |
| 5-VR1 | EV321264 | Single-Axial 2-Throw/Vol. V16L4G3N 10kAx2 | 36-22-50 |
| 5-VR3 | EV315412 | Semi-Fixed/Vol. D8 Axial 5kB | 36-10-280 |
| 5-VR4 | EV315413 | Semi-Fixed/Vol. D8 Axial 50kB | 36-10-280 |
| 5-VR5,6 | EV322416 | Semi-Fixed/Vol. D8 Axial 30kB | 36-10-280 |
| 5-VR7,8 | EV315413 | Semi-Fixed/Vol. D8 Axial 50kB | 36-10-280 |
| 5-VR9 | EV315414 | Semi-Fixed/Vol. D8 Axial 20kB | 36-10-280 |
| 5-VR10 | EV314968 | Semi-Fixed/Vol. D10 Axial 100kB | 36-10-281 |
| 5-VL1 | EO321336 | Vari. Inductor FE-002 10MH | 23-1-333 |
| 5-L1 | EO321295 | Ferri Inductor 4.7μH(J) | 23-1-335 |
| 5-T1 | EO321268 | OSC Coil OSM-002 | 23-4-55 |
| 5-FL1 | ER309120 | Dolby Filter D07-003 | 53-1-143 |
| 5-FL2 | ER309119 | Dolby Filter D07-001 | 53-1-143 |
| 5-FL3,4 | EO315758 | Trap Coil 100S-431 | 23-1-331 |
| 5-FR1 | ER319510 | Fuse/R. 1/4W 56 ohms(J) | 35-14-23 |
| 5-R96 | ER321290 | Metal Oxide Film/R. 2W 120 ohms(J) | 35-11-22 |
| 5-C4 | EC306419 | Styrol/C. 680PF(J) 50WV | 24-11-14 |
| 5-C8 | EC306988 | Styrol/C. 330PF(J) 50WV | 24-11-14 |
| 5-C25 | EC321061 | Solid Aluminum/C. 0.1μF(K) 25WV | 24-23-8 |
| 5-C32 | EC321292 | Solid Aluminum/C. 0.15μF(K) 25WV | 24-23-8 |
| 5-C43 | EC321339 | Polypropylene Film/C. (Vert.) 0.0091μF(G) 100WV | 24-22-6 |
| 5-C44 | EC321340 | Polypropylene Film/C. (Vert.) 0.0082μF(G) 100WV | 24-22-6 |
| 5-C45 | EC321341 | Polypropylene Film/C. (Vert.) 0.0075μF(G) 100WV | 24-22-6 |
| 5-C46 | EC321342 | Polypropylene Film/C. (Vert.) 0.0068μF(G) 100WV | 24-22-6 |
| 5-C49 | EC321349 | Polypropylene/C. 0.0022μF(J) 630WV | 24-22-9 |
| 5-C56 | EC321292 | Solid Aluminum/C. 0.15μF(K) 25WV | 24-23-8 |
| 5-C63 | EC321061 | Solid Aluminum/C. 0.1μF(K) 25WV | 24-23-8 |
| 5-C74 | EC306980 | Styrol/C. 220PF(J) 50WV | 24-11-14 |
| 5-3 | EJ326017 | Pin Jack Assy 4P GX-M10 (U/T) | CE-5210 |
| 5-4 | EJ326009 | Pin Jack Assy 4P GX-M10 (JPN) | CE-5210 |
| 5-5 | ZW263946 | Nylon Rivet 4x5 | 2-7-57 |
| 5-6 | ZS325495 | Tapping Screw, #2 BR 3x6 | |
| 5-7 | ZW273802 | Toothed Lock Washer, M3 | |

## 6. SYS. CON (NEW) P.C BOARD (CE-5206A) BLOCK

| Symbol No. | Parts No. | Description | Schematic No. |
|---|---|---|---|
| 6-1 | BA326002 | Sys. Con (New) P.C Board Comp. GX-M10 | CE-5217 |
| 6-IC1 | EI213390 | IC NJM4558D | 45-8-191 |
| 6-IC2 | EI321346 | IC MSM5953RS | 45-8-380 |
| 6-IC3 | EI304657 | IC TC4011BP | 45-8-232 |
| 6-TR1 | ET639437 | Transistor 2SC945L(Q)(P) | 45-1-85 |
| 6-TR2 | ET554657 | Transistor 2SA733(P)(Q) | 45-1-124 |
| 6-TR3to5 | ET639437 | Transistor 2SC945L(Q)(P) | 45-1-85 |
| 6-TR6 | ET307349 | Transistor 2SD794(P)(Q) | 45-1-334 |
| 6-D1to10 | ED560913 | Silicon Diode 1S2473 VE | 45-3-23 |
| 6-D11 | ED306109 | Silicon Diode W03B | 45-2-78 |
| 6-D12 | ED310387 | Zener Diode HZ12B-2 | 45-6-80 |
| 6-D13,14 | ED560913 | Silicon Diode 1S2473 VE | 45-3-23 |
| 6-D15,16 | ED308952 | Germanium Diode 1K34A-LR | 45-3-47 |
| 6-SW1to4 | ES321212 | Push SW. SUF-41 | 25-5-343 |
| 6-C1 | EC316569 | Solid Aluminum/C. 0.22μF(K) 25WV | 24-19-3 |
| 6-C5 | EC313532 | NP/C. 1μF(M) 50WV | 24-17-31 |
| 6-C8 | EC313826 | Solid Aluminum/C. 0.1μF(K) 25WV | 24-19-3 |
| 6-C9 | EC321343 | NP/C. 0.1μF(M) 50WV | 24-17-31 |
| 6-C12to14 | EC313532 | NP/C. 1μF(M) 50WV | 24-17-31 |
| 6-2 | ZS422076 | Screw, Pan 3×5 | |

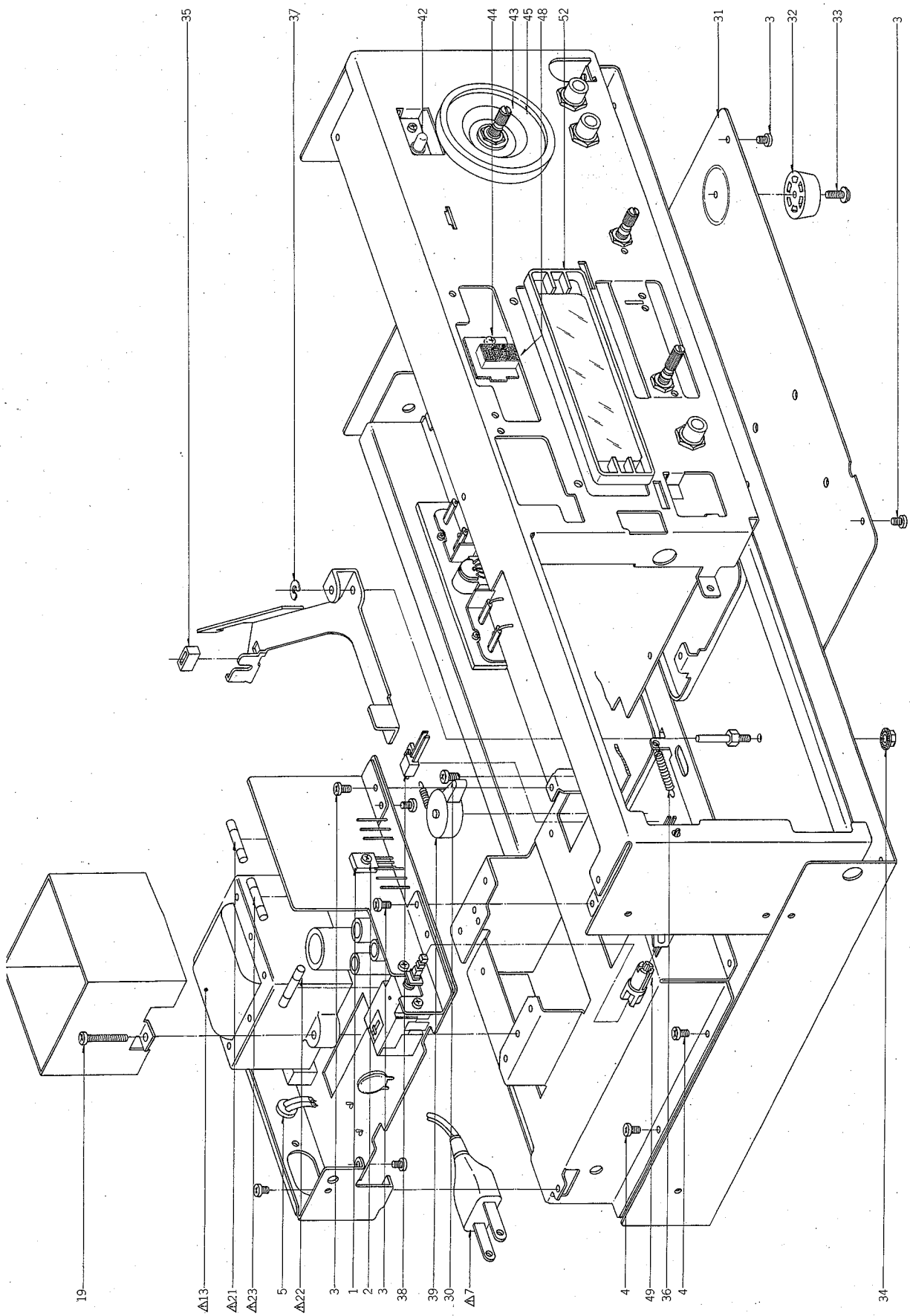
## 7. POWER SUPPLY (A/B) P.C BOARD (CE-5202/5205) BLOCK

| Symbol No. | Parts No. | Description | Schematic No. |
|---|---|---|---|
| 7-1 | BA326004 | Power Supply (A) P.C Board Comp GX-M10 (U/T) | CE-5220 |
| 7-2 | BA326005 | Power Supply (B) P.C Board Comp GX-M10 (JPN) | CE-5220 |
| 7-3 | BA326006 | Power Supply (B) P.C Board Comp GX-M10 (CSA) | CE-5220 |
| 7-4 | BA326007 | Power Supply (B) P.C Board Comp GX-M10 (AAL) | CE-5220 |
| 7-5 | BA326008 | Power Supply (C) P.C Board Comp GX-M10 (CEE) (CEE, UK, SAA) | CE-5220 |
| 7-TR1 | ET307349 | Transistor 2SD794(P)(Q) | 45-1-334 |
| 7-D1 | ED315960 | Silicon Diode WL02 | 45-2-93 |
| 7-D2 | ED313846 | Zener Diode HZ16-3 | 45-6-80 |
| 7-SW1 | ES310839 | ⚠ Push SW. SDG1P-E 5A/80A 250V | 25-5-310 |
| 7-SW1 | ES315159 | ⚠ Push SW. SDG1P (JPN) | 25-5-330 |
| 7-SW1 | ES655806 | ⚠ Push SW. SDG1P-J TV3 (CSA) | 25-5-187 |
| 7-SW1 | ES665875 | ⚠ Push SW. SDG1P-J TV-3 (UL/CSA) (AAL) | 25-5-199 |
| 7-SW1 | ES665807 | ⚠ Push SW. SDG5P-E 5A/80A 250V (CEE,UK,SAA) | 25-5-182 |
| 7-VS1 | MZ283140 | ⚠ Voltage Changer 12M-60031 (U/T) | 40-2-13 |
| 7-R1 | ER321228 | Carbon/R. F L/2W 470 ohms(J) | 35-11-27 |
| 7-R3 | ER305722 | Metal Oxide Film/R. 2W 220 ohms(J) | 35-11-22 |
| 7-R4 | ER321290 | Metal Oxide Film/R. 2W 120 ohms(J) | 35-11-22 |
| 7-C3 | EC316230 | Elect./C. (Vert.) 2200μF 35WV | 24-12-46 |
| 7-C7 | EC316230 | Elect./C. (Vert.) 2200μF 35WV | 24-12-46 |
| 7-C9 | EC321302 | Ceramic/C. E 0.01μF(Z) 250VAC (U/T, JPN, AAL) | 24-5-90 |
| 7-C9 | EC314688 | Ceramic/C. DE7150 FZ 0.01μF(P) 125WV (CSA) | 24-5-87 |
| 7-C9 | EC301320 | MP/C. 4700PF(M) 250WV (CEE, UK, SAA) | 24-9-122 |
| 7-6 | ZS379350 | Screw, Pan 3×6 | |
| 7-7 | ZS325495 | Tapping Screw, #2 BR 3×6 | |

## 8. BAR METER P.C BOARD (CE-5209) BLOCK

| Symbol No. | Parts No. | Description | Schematic No. |
|---|---|---|---|
| 8-IC1,2 | EI315799 | IC HA12019 | 45-8-366 |
| 8-IND1 | EM321312 | Bar Meter FIP48BW16YS | 59-1-1 |

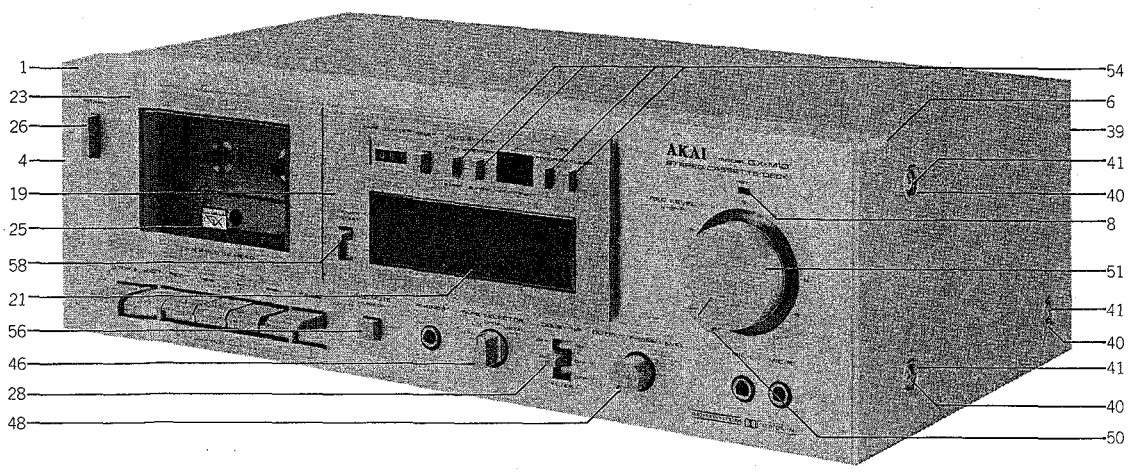
## 9. ASSEMBLY BLOCK

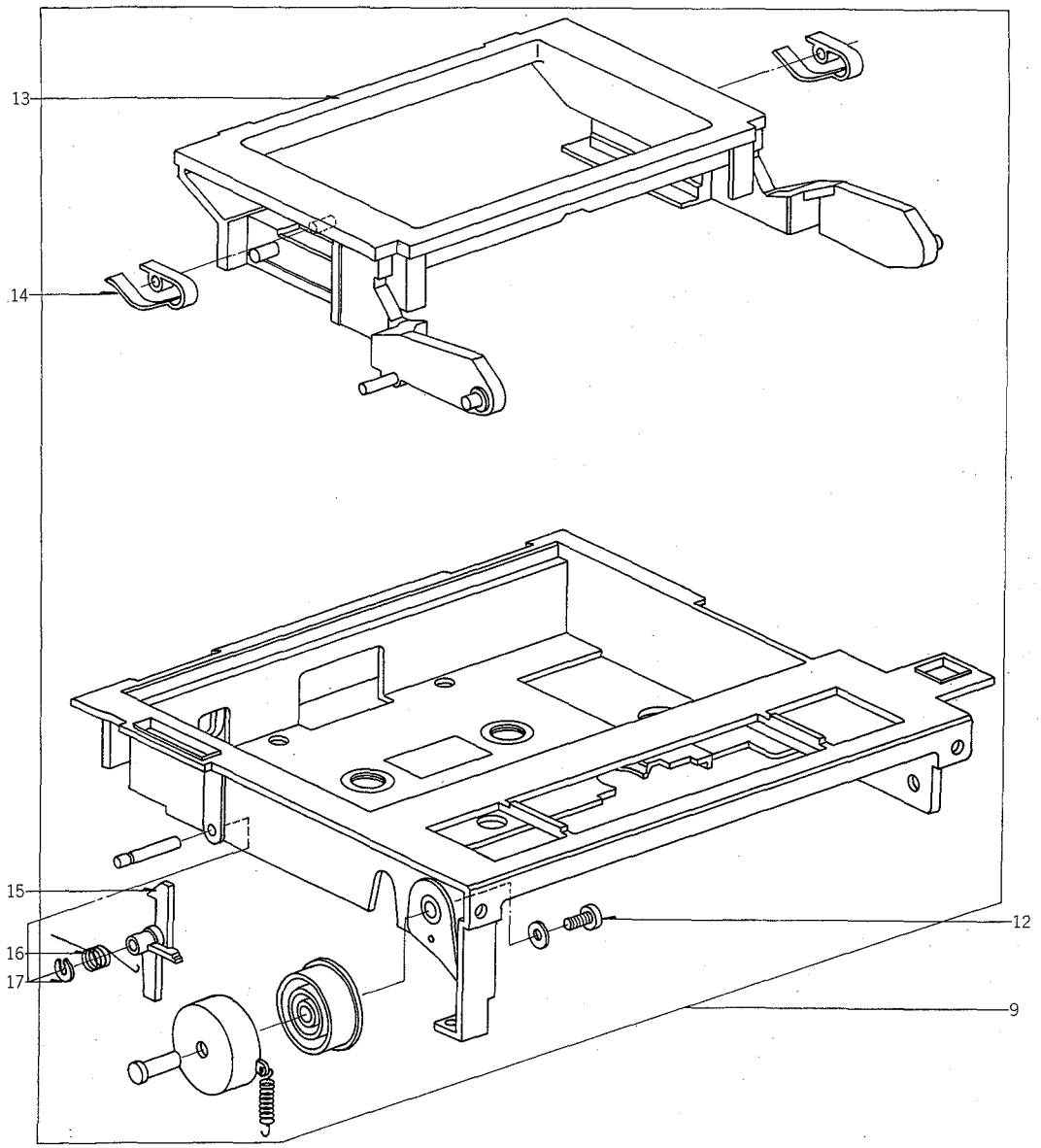


## ASSEMBLY BLOCK

| Ref. No. | Parts No. | Description | Schematic No. |
|---|---|---|---|
| | | **POWER SUPPLY BLOCK** | |
| 9-1 | ET307349 | Transistor 2SD794(P)(Q) | 45-1-334 |
| 9-2 | ZS379350 | Screw, Pan 3×6 | |
| 9-3 | ZS325495 | Tapping Screw, #2 BR 3×6 | |
| 9-4 | ZS447840 | Tapping Screw, #2 BR 3×8 | |
| 9-5 | EZ631945 | Strain Relief SR-4N-4 (U/T, JPN, CSA, AAL) | 2-7-49 |
| 9-6x | EJ692908 | Strain Relief SR-5N-4 (CEE, UK, SAA) | 2-7-60 |
| 9-7 | EW306428 | ⚠ AC Cord (U/T) | 26-3-64 |
| 9-8x | EW306427 | ⚠ AC Cord (JPN) | 26-3-63 |
| 9-9x | EW305691 | ⚠ AC Cord CUL (CSA, AAL) | 26-3-65 |
| 9-10x | EW313882 | ⚠ AC Cord EC (CEE) | 26-3-66 |
| 9-11x | EW313884 | ⚠ AC Cord BASEC (UK) | 26-3-67 |
| 9-12x | EW313883 | ⚠ AC Cord SAA (SAA) | 26-3-69 |
| 9-13 | BT321222 | ⚠ Power Trans. CET-21 (U/T) | 38-4-745 |
| 9-14x | BT321223 | ⚠ Power Trans. CET-22 (JPN) | 38-4-746 |
| 9-15x | BT321226 | ⚠ Power Trans. CET-25 (CSA) | 38-4-749 |
| 9-16x | BT321225 | ⚠ Power Trans. CET-24 (AAL) | 38-4-748 |
| 9-17x | BT321224 | ⚠ Power Trans. CET-23 (CEE) | 38-4-747 |
| 9-18x | BT321227 | ⚠ Power Trans. CET-26 (UK, SAA) | 38-4-750 |
| 9-19 | ZS321279 | Tapping Screw, #2 BR 3×18 (U/T, JPN, CSA, AAL) | |
| 9-20x | ZS308513 | Tapping Screw, #2 BR 3×12 W=8 (CEE, UK, SAA) | |
| 9-21 | EF321323 | ⚠ Fuse 250MA 250V (U/T,JPN) | 39-1-64 |
| 9-22 | EF309388 | ⚠ Fuse 800MA 250V (U/T,JPN) | 39-1-64 |
| 9-23 | EF309387 | ⚠ Fuse 1A 250V (U/T, JPN) | 39-1-64 |
| 9-24x | EF315334 | ⚠ Fuse 250MA 125V (CSA, AAL) | 39-1-65 |
| 9-25x | EF309391 | ⚠ Fuse 800MA 125V (CSA, AAL) | 39-1-65 |
| 9-26x | EF310229 | ⚠ Fuse 1A 125V (CSA, AAL) | 39-1-65 |
| 9-27x | EF300588 | ⚠ Fuse (EAWK) (CEE,UK,SAA) | 39-1-60 |
| 9-28x | EF593706 | ⚠ Fuse (SEMKO T Type) 500MAT (CEE, UK, SAA) | 39-1-53 |
| 9-29x | EF601942 | ⚠ Fuse (SEMKO T Type) 630MAT (CEE, UK, SAA) | 39-1-53 |
| | | **AMP CHASSIS BLOCK** | |
| 9-30 | ZS306021 | S-Tight Screw, Pan 3×6 | |
| 9-31 | SP321464 | Bottom Plate | CE-5013 |
| 9-32 | SA306240 | Rubber Foot (B) | LE-6740 |
| 9-33 | ZS306463 | S-Tight Screw, Pan 3×8 w/Flange | |
| 9-34 | ZW413267 | Flange Nut M4 | |
| 9-35 | MB510164 | Cushion Rubber | CG-7306 |
| 9-36 | ZG305641 | REC Spring | CN-5313 |
| 9-37 | ZW290283 | 'U' Ring 2.85M | 6-1-1 |
| 9-38 | ES301747 | Leaf SW. BSW-1F TX-2 | 25-10-30 |
| 9-39 | TC305728 | Oil Clutch Comp. (E) GXC-706D | CN-5335 |
| | | **ASSEMBLY BLOCK** | |
| 9-40x | ZS200676 | Tapping Screw, #2 Countersunk 3×6 | |
| 9-41x | ZS321537 | Special Tapping Screw, 3×10 | 7-1-70 |
| 9-42 | ED321269 | LED GL5PR6 | 45-15-34 |
| 9-43 | EV321263 | Double-Axial 2-Throw/Vol. VI6L4DG8N 50kA×2 | 36-18-20 |
| 9-44x | ZS422076 | Screw, Pan 3×5 | |
| 9-45 | SE319671 | Knob Escatcheon Part GX-M10 | CE-6220 |
| 9-46x | SE319672 | Knob Escatcheon (BL) Part GX-M10-BL | CE-6220 |
| 9-47x | ZW260370 | Nylon Rivet 3.4×5.5 | 2-7-56 |
| 9-48 | ED321347 | 7 Segment LED TLR-331 | 45-15-33 |
| 9-49 | ML321550 | Joint | CE-6205 |
| 9-50x | ML321472 | Joint | CE-5021 |
| 9-51x | ML321376 | Safety Lever (A) | CE-1011 |
| 9-52 | ML321466 | Meter Holder | CE-5015 |

## 10. FINAL ASSEMBLY BLOCK



## FINAL ASSEMBLY BLOCK

| Ref. No. | Parts No. | Description | Schematic No. |
|---|---|---|---|
| | | **FRONT PANEL BLOCK** | |
| 10-1 | BD319673 | Front Panel BLK GX-M10 (U/T) (Except JPN, AAL) | CE-6216 |
| 10-2x | BD319738 | Front Panel BLK GX-M10 (JPN) (JPN, AAL) | CE-6216 |
| 10-3x | BD319674 | Front Panel BLK GX-M10-BL | CE-6216 |
| 10-4 | TC321479 | Side Mold (L) | CE-6004 |
| 10-5x | TC321478 | Side Mold (L-BL) | CE-6004 |
| 10-6 | TC321481 | Side Mold (R) | CE-6004 |
| 10-7x | TC321480 | Side Mold (R-BL) | CE-6004 |
| 10-8 | TC321483 | REC Indicator | CE-6006 |
| 10-9 | BZ324600 | LID Housing Assy GX-M10 | CE-6217 |
| 10-10x | BZ324597 | Lid Housing Assy GX-M10-BL | CE-6217 |
| 10-11x | ZW550697 | Washer (SPC) D2.9x7.4x0.5t | |
| 10-12 | ZS608220 | Screw, Pan 2.6x6 | |
| 10-13 | TC321486 | LID Frame | CE-6010 |
| 10-14 | ZG321487 | Mold Spring | CE-6011 |
| 10-15 | TC321488 | Lock Plate | CE-6013 |
| 10-16 | ZG321490 | Lock Spring | CE-6015 |
| 10-17 | ZW270088 | 'E' Ring 1.9M | 6-1-9 |
| 10-18x | ZW260370 | Nylon Rivet 3.4x5.5 | 2-7-56 |
| 10-19 | SZ319675 | Meter Window Assy | CE-6218 |
| 10-20x | SZ319676 | Meter Window Assy (BL) | CE-6218 |
| 10-21 | SZ321494 | Meter Window | CE-6018 |
| 10-22x | ZW305006 | Nylon Rivet 4x5 | 2-7-58 |
| 10-23 | BD319677 | Lid Panel Assy GX-M10 | CE-6219 |
| 10-24x | BD319678 | Lid Panel Assy GX-M10-BL | CE-6219 |
| 10-25 | SM315737 | Super GX Name Plate | CF-6236 |
| | | **FINAL ASSEMBLY BLOCK** | |
| 10-26 | SB316498 | Button (B) | CU-6009 |
| 10-27x | SB316499 | Button (B-BL) | CU-6009 |
| 10-28 | SK321500 | Lever Knob (A) | CE-6025 |
| 10-29x | SK321501 | Lever Knob (A-BL) | CE-6025 |
| 10-30x | ZS325495 | Tapping Screw, #2 BR 3x6 | |
| 10-31x | ZS406416 | Tapping Screw, #2 Countersunk 3x8 | |
| 10-32x | SP319449 | Back Board (A-6) (U/T) | CE-6040,6208 |
| 10-33x | SP319450 | Back Board (B-6) (JPN) | CE-6036,6206 |
| 10-34x | SP319451 | Back Board (C-6) (CSA) | CE-6040,6206 |
| 10-35x | SP324592 | Back Board (F-6) (AAL) | CE-6036,6037 |
| 10-36x | SP319452 | Back Board (D-6) (CEE) | CE-6040,6207 |
| 10-37x | SP319453 | Back Board (E-6) (UK,SAA) | CE-6040,6207 |
| 10-38x | ZS225134 | Tapping Screw, #2 Pan 3x10, w/Washer | |
| 10-39 | BC321509 | Upper Cover (A) (Except AAL, BL) | CE-6030 |
| 10-40 | ZW315929 | Spot Facing Washer (B) | MU-6028 |
| 10-41 | ZS315878 | S-Tight Screw, Bind 4x8 | |
| 10-42x | BC321508 | Upper Cover (B) (AAL) | CE-6029 |
| 10-43x | BC321510 | Upper Cover (A-BL) | CE-6030 |
| 10-44x | ZS310588 | S-Tight Screw, Bind 4x8 (Black) | |
| 10-45x | ZW548010 | Spot Facing Washer (Black) | MU-6028 |
| 10-46 | SK321502 | Knob (A) | CE-6026 |
| 10-47x | SK321503 | Knob (A-BL) | CE-6026 |
| 10-48 | SK315932 | Knob (C) | CM-6308 |
| 10-49x | SK315933 | Knob (C-BL) | CM-6308 |
| 10-50 | SK321506 | Double Knob (Lower) | CE-6028 |
| 10-51 | SK321504 | Double Knob (Upper) | CE-6027 |
| 10-52 | SK321507 | Double Knob (Lower-BL) | CE-6028 |
| 10-53x | SK321505 | Double Knob (Upper-BL) | CE-6027 |
| 10-54 | SB321522 | Button (A) | CE-6202 |
| 10-55x | SB321523 | Button (A-BL) | CE-6202 |
| 10-56 | SB316316 | Button (B) | CM-6305 |
| 10-57x | SB316317 | Button (B-BL) | CM-6305 |

# INDEX

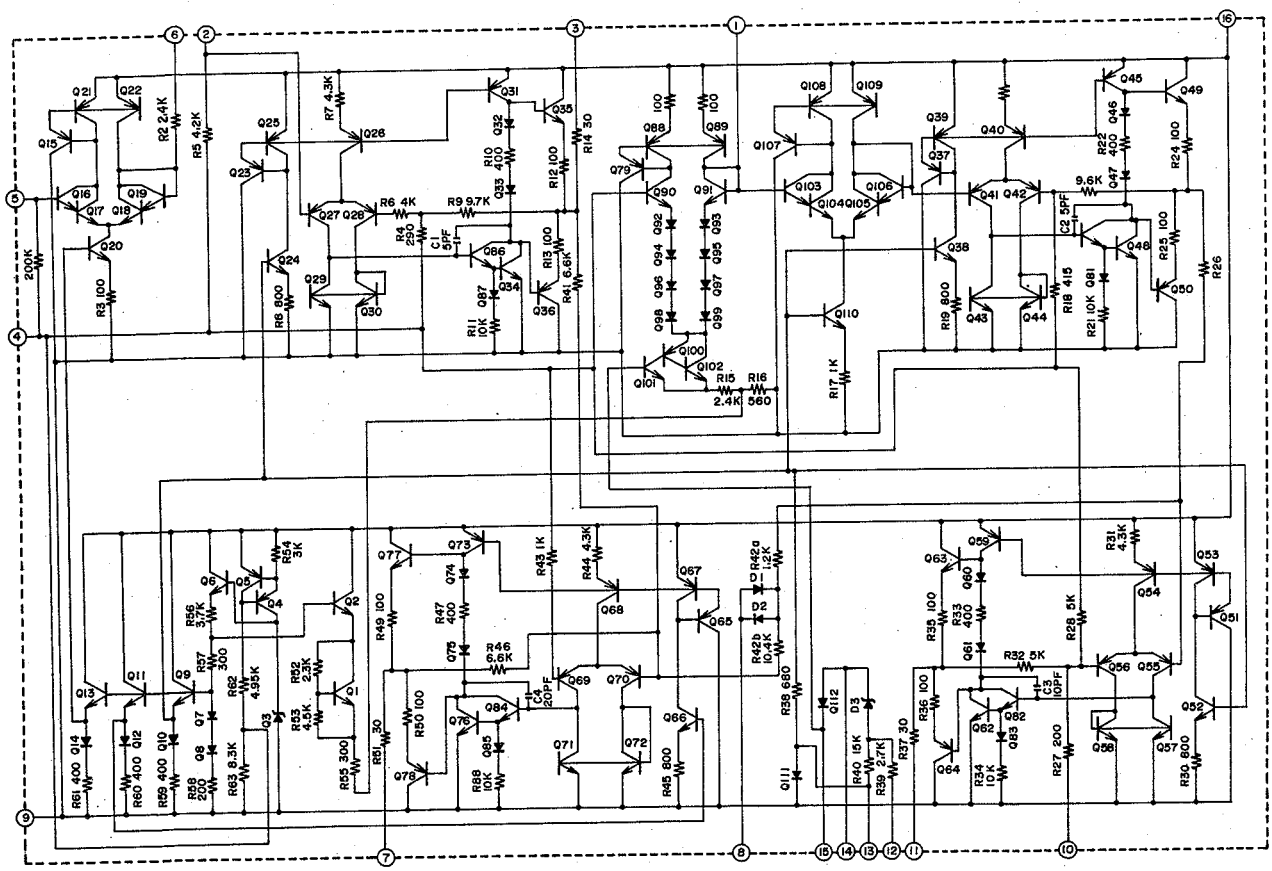

| Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. |
|---|---|---|---|---|---|---|---|---|---|
| BA326002 | 6-1 | EI315799 | 8-IC1,2 | MI319709 | 3-4 | ZG321490 | 10-16 | | |
| BA326004 | 7-1 | EI321346 | 6-IC2 | ML319693 | 4-18 | ZG321535 | 2-19 | | |
| BA326005 | 7-2 | EI605013 | 5-IC1 | ML321376 | 9-51x | ZG321536 | 2-7 | | |
| BA326006 | 7-3 | EJ316156 | 5-J3 | ML321404 | 4-16 | ZG321538 | 4-13 | | |
| BA326007 | 7-4 | EJ321328 | 5-J1 | ML321466 | 9-52 | ZG321544 | 4-48 | | |
| BA326008 | 7-5 | EJ326009 | 5-4 | ML321472 | 9-50x | ZG321548 | 4-62 | | |
| BA326010 | 5-2 | EJ326017 | 5-3 | ML321550 | 9-49 | ZG321549 | 4-61 | | |
| BA326016 | 5-1 | EJ692908 | 9-6x | MR321403 | 4-65 | ZG324329 | 4-5 | | |
| BC321508 | 10-42x | EL321321 | 4-35 | MT305793 | 4-14 | ZG324330 | 4-6 | | |
| BC321509 | 10-39 | EM321312 | 8-IND1 | MV368886 | 4-21 | ZG325100 | 4-54 | | |
| BC321510 | 10-43x | EO315758 | 5-FL3,4 | MZ283140 | 7-VS1 | ZG465636 | 2-15 | | |
| BD319673 | 10-1 | EO321268 | 5-T1 | MZ321396 | 4-7 | ZG514440 | 4-8 | | |
| BD319674 | 10-3x | EO321295 | 5-L1 | MZ321417 | 4-49 | ZS200676 | 9-40x | | |
| BD319677 | 10-23 | EO321336 | 5-VL1 | MZ321418 | 4-59 | ZS225134 | 10-38x | | |
| BD319678 | 10-24x | EP321319 | 3-12 | MZ321419 | 4-60 | ZS283454 | 2-16 | | |
| BD319738 | 10-2x | ER305722 | 7-R3 | SA306240 | 9-32 | ZS306021 | 9-30 | | |
| BH319689 | 2-1x | ER309119 | 5-FL2 | SB316316 | 10-56 | ZS306463 | 9-33 | | |
| BL319692 | 2-17 | ER309120 | 5-FL1 | SB316317 | 10-57x | ZS308513 | 9-20x | | |
| BM319691 | 3-1 | ER319510 | 5-FR1 | SB316498 | 10-26 | ZS310343 | 4-23 | | |
| BR321539 | 4-10 | ER321228 | 7-R1 | SB316499 | 10-27x | ZS310588 | 10-44x | | |
| BR321540 | 4-15 | ER321290 | 5-R96 | SB321522 | 10-54 | ZS315878 | 10-41 | | |
| BT321222 | 9-13 | ER321290 | 7-R4 | SB321523 | 10-55x | ZS321279 | 9-19 | | |
| BT321223 | 9-14x | ES283072 | 5-SW2 | SE319671 | 9-45 | ZS321320 | 4-32 | | |
| BT321224 | 9-17x | ES283173 | 4-31 | SE319672 | 9-46x | ZS321338 | 3-3 | | |
| BT321225 | 9-16x | ES301747 | 9-38 | SK315932 | 10-48 | ZS321537 | 9-41x | | |
| BT321226 | 9-15x | ES310839 | 7-SW1 | SK315933 | 10-49x | ZS322402 | 3-10 | | |
| BT321227 | 9-18x | ES315159 | 7-SW1 | SK321500 | 10-28 | ZS322402 | 4-30 | | |
| BZ321546 | 4-53 | ES316533 | 5-SW5 | SK321501 | 10-29x | ZS322402 | 4-69x | | |
| BZ321547 | 4-57 | ES316535 | 5-SW1 | SK321502 | 10-46 | ZS325495 | 5-6 | | |
| BZ324597 | 10-10x | ES317622 | 4-34 | SK321503 | 10-47x | ZS325495 | 7-7 | | |
| BZ324600 | 10-9 | ES321212 | 6-SW1to4 | SK321504 | 10-51 | ZS325495 | 9-3 | | |
| EC301320 | 7-C9 | ES321266 | 5-SW4 | SK321505 | 10-53x | ZS325495 | 10-30x | | |
| EC306419 | 5-C4 | ES321274 | 5-SW3 | SK321506 | 10-50 | ZS379350 | 7-6 | | |
| EC306980 | 5-C74 | ES321310 | 4-33 | SK321507 | 10-52x | ZS379350 | 9-2 | | |
| EC306988 | 5-C8 | ES655806 | 7-SW1 | SM315737 | 10-25 | ZS406416 | 10-31x | | |
| EC313532 | 6-C5 | ES665807 | 7-SW1 | SP319449 | 10-32x | ZS417216 | 4-28 | | |
| EC313532 | 6-C12to14 | ES665875 | 7-SW1 | SP319450 | 10-33x | ZS419940 | 2-6 | | |
| EC313826 | 6-C8 | ET301464 | 5-TR6 | SP319451 | 10-34x | ZS422076 | 6-2 | | |
| EC314688 | 7-C9 | ET307349 | 6-TR6 | SP319452 | 10-36x | ZS422076 | 9-44x | | |
| EC316230 | 7-C3 | ET307349 | 7-TR1 | SP319453 | 10-37x | ZS432843 | 3-14 | | |
| EC316230 | 7-C7 | ET307349 | 9-1 | SP321464 | S-31 | ZS447840 | 9-4 | | |
| EC316569 | 6-C1 | ET308954 | 5-TR1 | SP324592 | 10-35x | ZS462947 | 2-14 | | |
| EC321061 | 5-C25 | ET310833 | 5-TR10,11 | SZ319675 | 10-19 | ZS477876 | 3-13x | | |
| EC321061 | 5-C63 | ET539133 | 5-TR8,9 | SZ319676 | 10-20x | ZS499454 | 2-12 | | |
| EC321292 | 5-C32 | ET554657 | 5-TR14 | SZ321494 | 10-21 | ZS521987 | 2-13 | | |
| EC321292 | 5-C56 | ET554657 | 6-TR2 | TC282396 | 4-9 | ZS524812 | 2-10 | | |
| EC321302 | 7-C9 | ET603257 | 5-TR2 | TC305728 | 9-39 | ZS590804 | 2-11 | | |
| EC321339 | 5-C43 | ET638504 | 5-TR7 | TC319723 | 4-1 | ZS608220 | 10-12 | | |
| EC321340 | 5-C44 | ET639437 | 5-TR3to5 | TC319724 | 4-63 | ZW260370 | 9-47x | | |
| EC321341 | 5-C45 | ET639437 | 5-TR13 | TC321362 | 4-37 | ZW260370 | 10-18x | | |
| EC321342 | 5-C46 | ET639437 | 6-TR1 | TC321363 | 4-38x | ZW263946 | 5-5 | | |
| EC321343 | 6-C9 | ET639437 | 6-TR3to5 | TC321364 | 4-39 | ZW269335 | 3-5 | | |
| EC321349 | 5-C49 | ET655356 | 5-TR12 | TC321365 | 4-40x | ZW270088 | 10-17 | | |
| ED306109 | 6-D11 | EV314968 | 5-VR10 | TC321367 | 4-41 | ZW270101 | 4-24 | | |
| ED308952 | 5-D1 | EV315412 | 5-VR3 | TC321368 | 4-42x | ZW270123 | 4-47 | | |
| ED308952 | 5-D6,7 | EV315413 | 5-VR4 | TC321369 | 4-43 | ZW273802 | 5-7 | | |
| ED308952 | 5-D10 | EV315413 | 5-VR7,8 | TC321370 | 4-44x | ZW290283 | 9-37 | | |
| ED308952 | 6-D15,16 | EV315414 | 5-VR9 | TC321415 | 4-50 | ZW305006 | 10-22x | | |
| ED310387 | 6-D12 | EV321263 | 9-43 | TC321478 | 10-5x | ZW305546 | 4-19 | | |
| ED313846 | 7-D2 | EV321264 | 5-VR1 | TC321479 | 10-4 | ZW305546 | 4-67 | | |
| ED315960 | 7-D1 | EV322416 | 5-VR5,6 | TC321480 | 10-7x | ZW313501 | 2-4 | | |
| ED321269 | 9-42 | EW305691 | 9-9x | TC321481 | 10-6 | ZW315929 | 10-40 | | |
| ED321347 | 9-48 | EW306427 | 9-8x | TC321483 | 10-8 | ZW321317 | 4-64 | | |
| ED560913 | 5-D2to5 | EW306428 | 9-7 | TC321486 | 10-13 | ZW321393 | 4-12 | | |
| ED560913 | 5-D8,9 | EW313882 | 9-10x | TC321488 | 10-15 | ZW321424 | 3-9 | | |
| ED560913 | 5-D11 | EW313883 | 9-12x | ZG289236 | 2-3 | ZW321437 | 3-11 | | |
| ED560913 | 6-D1to10 | EW313884 | 9-11x | ZG305641 | 9-36 | ZW321437 | 4-20 | | |
| ED560913 | 6-D13,14 | EZ631945 | 9-5 | ZG312920 | 4-58 | ZW321437 | 4-66 | | |
| EF300588 | 9-27x | FE315742 | 2-5 | ZG312926 | 4-2 | ZW340648 | 4-17 | | |
| EF309387 | 9-23 | HP319079 | 2-9 | ZG312943 | 4-4 | ZW340648 | 4-36 | | |
| EF309388 | 9-22 | HZ309128 | 2-2 | ZG312945 | 2-18 | ZW357164 | 2-20 | | |
| EF309391 | 9-25x | HZ316252 | 2-8 | ZG318228 | 4-52 | ZW381644 | 4-11 | | |
| EF310229 | 9-26x | MB282778 | 3-2 | ZG321303 | 4-68 | ZW413267 | 9-34 | | |
| EF315334 | 9-24x | MB321389 | 3-7 | ZG321373 | 4-3 | ZW460787 | 4-55 | | |
| EF321323 | 9-21 | MB321391 | 3-6x | ZG321384 | 4-22 | ZW548010 | 10-45x | | |
| EF593706 | 9-28x | MB321392 | 4-29 | ZG321411 | 4-25 | ZW550697 | 10-11x | | |
| EF601942 | 9-29x | MB510164 | 9-35 | ZG321416 | 4-51 | ZW653163 | 4-56 | | |
| EI213390 | 6-IC1 | MC321324 | 4-27x | ZG321430 | 4-45 | | | | |
| EI304657 | 6-IC3 | MC321325 | 4-26 | ZG321431 | 4-46 | | | | |
| EI306141 | 5-IC2 | MI319686 | 3-8 | ZG321487 | 10-14 | | | | |

SECTION 3

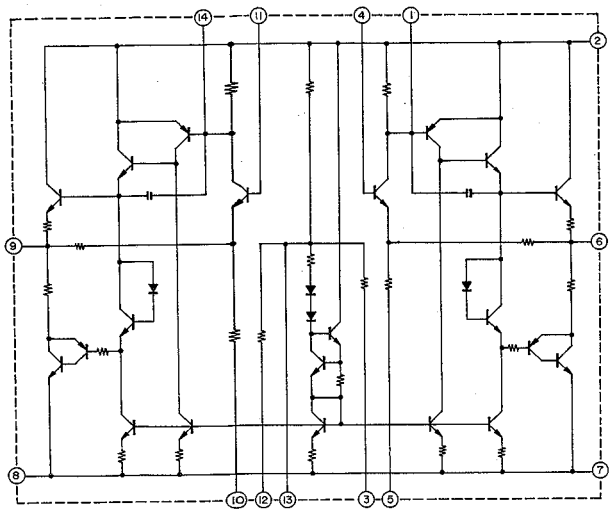
# SCHEMATIC DIAGRAM

1. SCHEMATIC DIAGRAM OF ICs
2. GX-M10 NO. 1582252A SCHEMATIC DIAGRAM

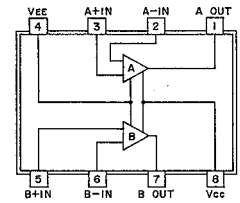
**NE545B**

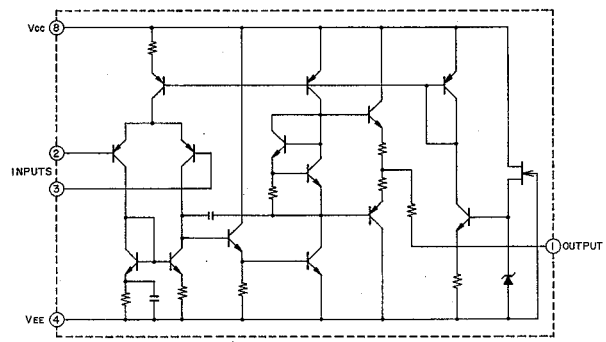


## LA4170

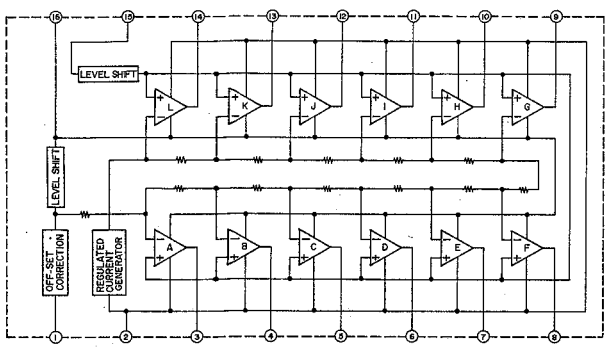


## MJM4558

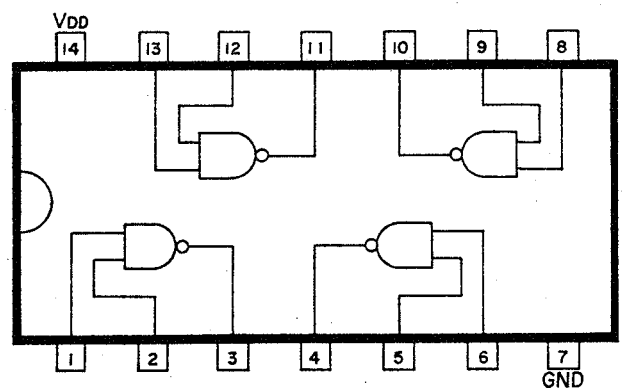


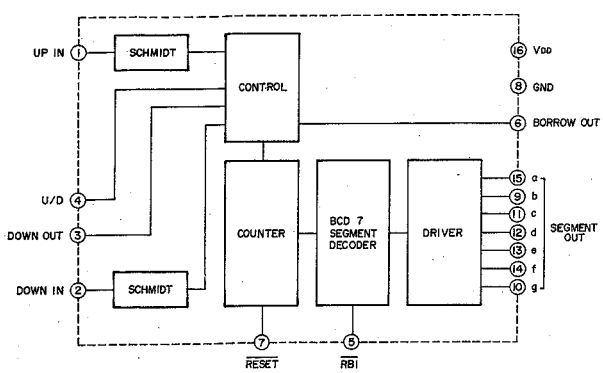

## HA12019




## TC4011BP




## MSM5953RS



GX-M10

JPN, AAL MODEL

PRE AMP P.C BOARD CE-5201A

METER P.C BOARD CE-5209

SYSTEM CONTROL P.C BOARD CE-5206A

VOLUME P.C BOARD 1/2 CE-5201C

VOLUME P.C BOARD 2/2 CE-5201C

PROGRAM LED P.C BOARD CE-5206B

REC P.C BOARD CE-5201B

LAMP P.C BOARD CE-1078

POWER SUPPLY P.C BOARD CE-5204

POWER SUPPLY P.C BOARD CE-5205

POWER SUPPLY P.C BOARD CE-5203

POWER SUPPLY P.C BOARD CE-5202

2SA733
2SC945L
2SC1844
2SC2274K

2SC1312S

2SK68

2SD571

2SD794

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL, NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS (Ω)(W)(J)
ALL CAPACITORS IN μF 50(WV)(J)
(FS)=FAIL SAFE RESISTOR
(LL)=LOW LEAKAGE CAPACITORS
⊣⊢ MARK INDICATES NON POLAR CAPACITORS
POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA

GX-M10
SCHEMATIC DIAGRAM
NO. 1582252A

001076C